

MATERIALS CATALOG 3

COMPANY
CONFIDENTIAL

Tektronix®
COMMITTED TO EXCELLENCE

CATALOG

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PREFACE

COMPANY CONFIDENTIAL

The contents of this catalog are for the exclusive use of Tektronix Employees. Any unauthorized use is prohibited.

PURPOSE AND USE

This catalog is not intended to be a specification document by including all characteristics of the parts listed. It is a catalog with parts arranged in an order determined by the prime characteristic.

Parts not listed herein are either not to be used or are so new that their characteristics may yet be changed. We suggest you call the appropriate Component Engineer and/or check the component specification for complete details on any part before making a decision on its use. Specifications can be obtained from Reprographics, or viewed at any of the satellite aperture card locations.

FIELD CAUTION: No effort has been made to correlate the parts in this catalog with those parts which are available for replacement in the field. Some of the parts listed are not available for use as replacement parts. Ordering such parts will only slow your order and impede the general efficiency of the parts ordering process. All replacement parts are listed in the RPR (Replaceable Parts Record).

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

CORRECTIONS & SUGGESTIONS

Corrections or suggestions are encouraged at any time. Call 629-1860, 629-3029 or 629-3030 or mail to delivery station 92-325. Special forms for this purpose are also included at the back of the catalog.

HOW TO ORDER CATALOGS

Special forms for this purpose are included at the back of this catalog, or you may call 629-3029 Parts Cataloging, 92-325. We will need your name, payroll code, responsibility-cost center, phone number, and delivery station.

CATALOG DISTRIBUTION IS NOT AUTOMATIC We have special routing lists to announce new catalogs. A response to those notices is necessary each time to receive the next edition of a catalog. Call 629-3029 to have your name added to the mailing list.

SEND OUTDATED CATALOGS TO SALVAGE.

EIGHT CATALOG INDEX

This is a composite index of the items included in the eight catalogs. It is in alphabetical order, giving the catalog and section number in which the items are listed.

Cat	Sec	Type of Parts (Alpha List)	Cat	Sec	Type of Parts (Alpha List)	Cat	Sec	Type of Parts (Alpha List)
3	4	Adhesives	3	12	Flux	4	15	Plates (Identification and Instruction)
4	9	Air Filters	4	2	Forms (Coil & Transformer)	2	3	Posts (Threaded Spacers)
3	6	Aluminum (Extrusion)	8	6	Four Layer Diodes	4	2	Pot Cores
3	7	Aluminum (Bar, Wire, Flat, Tube)	4	8	Fuses, Fuseholders and Clips	5	6 - 8	Potentiometers (Variable Resistor)
2	15	Angle Brackets	2	10	Gaskets (RFI)	6	12	Power Supplies
Supp		Application Notes	3	4	Gasses	6	9	Power Supply Cable Assemblies
8	1 & 5	Arrays	2	11	Gears	8	1	Power Transistors
8	6	Back Diodes	8	15	Glow Lamps	2	2 & 3	Press Mount Hardware
4	8	Batteries	2	5	Grommets	Supp	3	Product Safety
2	11	Bearings (Sleeve)	2	14	Guides (Pin, Ckt Bd & Instr. Cab)	8		Programmable Thyristors
2	11	Belts (Drive)	2	13	Handles	2	11	Pulleys
3	9 & 12	Beryllium Materials	8	11 & 12	Heat Sinks	2	7	Push Buttons
4	10	Binding Posts	2	14	Hinges	8	8	Rectifier Diodes
2	15	Brackets, Angle	2	9	Holders	4	3	Relays
2	10	Brackets, Component Mounting	4	8	Holders (Battery)	Supp	0	Reliability Notes
3	8	Brass Material	4	9	Impellers (Air Fan)	5	1 - 5	Resistors, Fixed
2	13	Bumpers	8	15	Incandescent Lamps	5	6 - 8	Resistors, Variable
2	5	Bushings	8	15	Indicator Lights	2	8	Retaining Rings
2	9	Button Plugs	4	2	Inductors	4	1	RFI Filters
2	14	Cabinets (Fasteners)	3	5	Ink (Marking)	2	8	Rivets
2	13	Cabinets (Instrument)	2	7	Inserts (Knob)	8	8	Schottky Diodes
6	8	Cables (Assembly & Interconnection)	2	2	Inserts (Threaded)	8	3	SCR Thyristors
6	8 & 7	Cables (RF, Special Purpose, Flat)	2	13	Instrument Cabinets	2	1	Screws
6	11	Cable Nipples	3	2 - 4	Insulating Materials (Bulk)	8	3	Selected & Matched Transistors
5	9 - 14	Capacitors, Fixed	6	10	Insulation Sleeve	2	6	Shafts
5	15	Capacitors, Variable	2	3	Insulator Posts	2	10	Shielding, Gasket
8	15	Cartridge Lamps	8	13	Insulators	2	9	Shockmounts
2	13	Casters	1	1 - 21	Integrated Circuits (Microcircuits)	8	6	Shockly (Diodes)
2	14	Catches	4	13	Interconnection Systems (Ckt Bd)	8	8	Signal Diodes
3	4	Ceramic Molding Materials	4	10	Jacks (Telephone & Tip)	2	11	Sleeve Bearings
3	3	Ceramic Substrates	2	7	Knobs & Knob Subparts	2	14	Slides (Ckt Board & Instr. Cabinet)
2	11	Chains (Drive)	2	6	Knobs With Shafts	8	1	Small Signal Transistors
Supp		Chemical Elements & Symbols Table	2	7	Knob Design Data	8	6	Snap-Off Diodes
2	14	Circuit Board Ejectors	3	5	Lacquer	4	10	Sockets (Electrical Components)
4	13	Circuit Board Interconnect Systems	8	15	Lamps (Incand, Glow, Indicator)	3	12	Solder
3	3	Circuit Board Materials	8	15	Lampholders	4	3	Solenoids
2	2	Circuit Board Supports	8	8	Laser Diodes	3	5	Solvents
4	6	Circuit Breakers	2	14	Latches (Door, etc.)	2	3	Spacers (Threaded & Unthreaded)
2	9	Clamps	6	1	Leads (Formed)	4	8	Spark Gaps
2	9	Clips	8	14	LED's (Light Emitting Diodes)	1	7 & 17	Special Function (Digital & Linear) IC's
3	5	Coatings (Insulative, Resistive, Paints, Conductive & Precious Metal)	8	15	Lens (Indicator)	2	8	Springs (Helical)
4	2	Coils	1	8 & 18	Linear Integrated Circuits	2	11	Sprockets
3	1	Conductive Elastomers	2	14	Locks (Door, etc.)	3	15	Stainless Steel Material
4	10 - 14	Connectors (Ckt Board, Coax, Power, D Series, Flat Cable)	Supp		Logo List	2	3	Standoffs
4	13	Contacts	3	5	Lubricants	3	14	Steel Material
3	11 & 12	Copper & Misc. Copper Alloys	4	10	Lug Terminals (Solder and Solderless)	2	5	Strain Relief Bushings
3	9	Copper-Beryllium	3	13	Magnetic Shielding Material	2	9	Straps
4	2	Cores (For Coils & Transformers)	4	15	Markers, Identification	2	1	Studs (Threaded, Weld, Pressmount, etc.)
1	3 & 13	CMOS Integrated Circuits	1	2 & 12	Memory Selection Guide IC's	8	10	Surface Mount Diodes
2	6	Couplings, Shaft	1	1 - 20	Microcircuits	1	11 - 21	Surface Mount Integrated Circuits
4	1	Crystal Oscillators	1	21	Microcircuit Cover Lids	8	5	Surface Mount Transistors
4	1	Crystal Units & Holders	1	1 & 11	Microprocessors	4	3 - 7	Switches (Lever, Slide, Push, Toggle, Reed, Thermo, Rocker, Rotary, Power, Logic, Thumbwheel, etc.)
8	7	Current Limiting Diodes	2	12	Modular Packaging System	8	8	Switching Diodes
2	13	Cushioning Pads	1	5 & 15	MOS Integrated Circuits	3	4	Tape
4	3	Delay Lines, DIP, SIP & Bulk	1	1 & 11	Multifunction Integrated Circuits	1	21	Tek-made Integrated Circuits
2	7	Dials (Knob & Turns Counting)	8	14	Neon Lamps	Supp		Tek Part Number System
8	6 - 9	Diodes	3	12	Nickel Material (Bulk)	4	10	Terminals (Block, Grounding, Studs, Quick Disc, Feedthru)
4	10	Discrete Component Carriers	2	2	Nuts and Nut Blocks	2	1	Thumbscrews
Supp		EIA Date Code	1	8 & 18	Op Amps	1	6 & 16	TTL Integrated Circuits
1	4 & 14	ECL Integrated Circuits	8	14	Optoelectronic Devices	4	2	Transformers
Supp		Environmental and Reliability Notes	8	14	Optoisolators	8	1 - 5	Transistors
All	Preface	Evaluation Engineer	2	5	"O" Rings	8	3	Triac Thyristors
3	3	Epoxy Preforms	4	1	Oscillators (Crystal)	8	6	Tunnel Diodes
2	8	Eyelets	2	13	Pads (Cushioning)	8	3	Unijunction Thyristors
4	9	Fans and Impellers (Air)	3	5	Paint & Paint Additives	3	5	Varnish
2	14	Fasteners	3	10	Phosphor Bronze Material	8	8	Voltage Multipliers (Diodes)
2	13	Feet (Cabinet)	8	14	Photoconductors	4	8	Voltage Selectors (Fuse)
3	2	Felt Materials	8	14	Phototransistors	2	4	Washers (Flat, Lock, Spring Shoulder)
2	3	Ferrules	2	14	Pins (Guide)	6	1 - 4	Wire (Electrical)
8	2 & 5	FET's	2	8	Pins (Spring and Retaining)	8	7	Zener Diodes
4	1	Filters (RFI)	3	1	Plastic Materials (Bulk Molding)			
1	2	Flexible Disks	3	2	Plastics (Shapes and Sheets)			
2	13	Flipstands (Cabinet)						

EVALUATION ENGINEER RESPONSIBILITY

INSTRUMENTS GROUP (IG)

Accessories Division

Elizabeth Doolittle	253-5418	C1-735
Nghi Nguyen	253-5082	C1-735

Murdock Park Division (Passive & Electro-Mechanical only)

Walt Kirkbride	253-5172	C1-342
Jim Hookie	253-5582	C1-416

Portable Instruments Division (PID)

Ron Roberts, Mgr.	253-5253	C1-342
Dan Decker	253-5223	C1-342
Al Lavalle	253-5870	C1-342
Jeff Thompson	253-5872	C1-342

SYSTEMS GROUP

Logic Analyzer (LA) Divisions & Microprocessor Development Products (MDP)

Steve Fierro	629-3032	92-323
Wilton Hart	629-3036	92-323

Semiconductor Test Systems (STS) Division

Bill Pederson, Mgr.	629-1276	94-442
Jose Montoya	629-3041	94-442

COMPONENT ENGINEERING GROUP^a

Jerry Willard, Mgr.	627-2539	19-680	Analog: Small Signal Field-effect Transistors, Analog Switch ICs
Curt Bernal	627-6103	19-680	Analog: Diodes, High Voltage Multipliers, Opto Emitters/Detectors, Discrete GaAs, Fiber Optics
Steve Dimbat	627-2134	19-680	Passive/E.M.: Transformers/Inductors, Power Supplies, Line Filters, Relays, Fans, Resistors, Fuses
Abe Ghahyasi	627-2567	19-680	Digital: DRAMs, AC/ACT Logic
John Higley	627-6112	19-680	Digital: Programmable Logic, EPROMs, SRAMs, ROMs
Gary Johnson	627-1985	19-680	Digital: A/D Converters, Sample/Hold, DSP ICs, Digital ASIC
	627-2566	19-680	Digital: Microprocessors/Peripherals, Special Purpose VLSI and GaAs ICs
Neill Martin	627-2311	19-680	Passive/E.M.: Capacitors, Potentiometers, Switches, Batteries, Hardware
Jim Williamson	627-2552	19-680	Analog: Op-amps, Linear ICs, DACs, ECL, Transistors (all except S.S. FET's and GaAs), Opto Couplers, Voltage Regulators, and Controllers, Thyristors, Heat Sinks/Insulators
John Young	627-2165	19-680	Passive/E.M.: Interconnecting Cables, Power Cords, Connectors, Sockets, Crystals/Filters

PLASTICS ENGINEERING

Bert Hippe	627-2378	50-132	Plastic Molding Material
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^a Subscribing Divisions:

	SEMI'S	PASSIVES/E.M.
TV	X	X
MRI	X	X
CNA	X	X
LID	X	X
ITD	X	X
GPID	X	X
MSD	X	X
DDO	X	X
PID	X	
PTID	X	
MPD	X	
MAP	X	
HCO	X	

MATERIALS CATALOG 3

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UL INFORMATION

HOT WIRE IGNITION --

The number of seconds needed to ignite standard specimens which are wrapped with resistance wire that dissipates a specified level of electrical energy.

HIGH-AMPERE ARC IGNITION --

The number of arc exposures which are necessary to ignite a material when they are applied at a standard rate (either on the surface of the material or a specified distance from it).

HIGH-VOLTAGE ARC TRACKING RATE --

The rate (in/min) that a tracking path can be produced on the surface of the material under standardized conditions.

FLAMMABILITY --

Materials are classified, based on burning tests conducted in accordance with UL94.

The classifications are 94HB, 94V-2, 94V-1, or 94V-0.

UL recognized component plastics should be used in new design and redesign whenever possible. When choosing a plastic be sure that it is properly rated for your application according to the standard appropriate for your product. Additional information on plastics is contained in the UL "Yellow Book" - Recognized Component Directory, available in your local Product Safety Engineering area. For more information on the use of UL recognized component plastics, call Bert Hippe, Plastics, 627-2378, or your local Product Safety Engineer.

REGISTERED TRADEMARKS AND TRADENAMES USED IN THIS SECTION FOR PLASTICS

GENERIC NAME	TRADENAME	MANUFACTURER
ACETAL	FULTON THERMOCOMP	LNP Engineering Plastics LNP Engineering Plastics
ACETAL RESIN	CELCON DELRIN REED	American Hoechst E. I. du Pont de Nemours and Company, Inc. Reed Plastics
ACRYLIC	PLEXIGLAS	Rohm and Haas Company
ACRYLONITRILE-BUTADIENE-STYRENE (ABS)	CYCOLAC THERMOCOMP	GE Plastics LNP Engineering Plastics
EPOXY (EP)	HYSOL POLYSET	The Dexter Corporation Morton Chemical
EPOXY RESIN	ECCOSORB EPON STYCAST	Emerson & Cuming, Inc. Emerson & Cuming, Inc.
FLUOROCARBON (PTFE)	HALAR TEFLON TEFZEL	Allied Corporation E. I. du Pont de Nemours and Company, Inc. E. I. du Pont de Nemours and Company, Inc.
METHYLPENTENE POLYMER	TPX	Mitsui Chemicals, Inc.
PHENOLIC	FIBERITE	Fiberite Corporation
POLYALLOMER	TENITE	Eastman Kodak Company
POLYAMIDE (NYLON ^a) (PA)	CAPRON NYLAFIL NYLAGLAS NYLASAR NYLATRON PLASKON THERMOCOMP WELL-A-MELD ZYTEL	Allied Chemical Corporation AKZO Engineering Plastics AKZO Engineering Plastics AKZO Engineering Plastics The Polymer Corporation Allied Chemical Corporation LNP Engineering Plastics Nichols and Company, Inc. E. I. du Pont de Nemours and Company, Inc.
POLYCARBONATE (PC)	CALIBRE LEXAN MAKROLON REED STAT-KON THERMOCOMP	Dow Chemical General Electric Plastics Mobay Chemical Company Reed Plastics LNP Engineering Plastics LNP Engineering Plastics
POLYESTER (AROMATIC)	VECTRA	American Hoechst
POLYETHERIMIDE (PEI)	ULTEM	General Electric Plastics
POLYETHYLENE (PE)	AVECOR BAKELITE MARLEX TENITE ULTRATHENE	Eastman Chemical Products, Inc. Union Carbide Corporation Phillips Chemical Company Eastman Kodak Company U. S. I. Chemical Company

^a Nylon is not a tradename but a generic term for a class of polyamides.

REGISTERED TRADEMARKS AND TRADENAMES USED IN CATALOG 3 FOR PLASTICS (cont)

GENERIC NAME	TRADENAME	MANUFACTURER
POLYIMIDE (PI)	KAPTON	E. I. du Pont de Nemours and Company, Inc.
POLYPHENYLENE SULFIDE (PPS)	RYTON THERMOCOMP	Phillips Chemical Company LNP Engineering Plastics
POLYPROPYLENE (PP)	TENITE	Eastman Kodak Company
POLYSTYRENE (PS)	AMOCO DYLITE LUSTREX STYRAFIL STYRON THERMOCOMP	AMOCO Chemicals Corporation Koppers Company, Inc. Monsanto Chemical Company ARZO Engineering Plastics Dow Chemical LNP Engineering Plastics
POLYSULFONE	BAKELITE THERMOCOMP UDEL	AMOCO Chemicals Corporation LNP Engineering Plastics AMOCO Chemicals Corporation
POLYTETRAFLUOROETHYLENE (PTFE)	TEFLON	E. I. du Pont de Nemours and Company, Inc.
POLYURETHANE (PUR)	ADIPRENE ESTANE STAFOAM THERMOCOMP	E. I. du Pont de Nemours and Company, Inc. B. F. Goodrich Company American Latex Product Corporation LNP Engineering Plastics
POLYVINYL CHLORIDE (PVC) (VINYL)	GEON MANNER TEKNOR-APEX	B. F. Goodrich Company Manner Plastics Materials, Inc. H. M. Royal, Inc.
POLYVINYL FLUORIDE (PVF)	HALAR TEDLAR	Allied Chemical Corporation E. I. du Pont de Nemours and Company, Inc.
RUBBER (THERMOPLASTIC)	HYPALON SANTOPRENE TPR	LNP Engineering Plastics Monsanto Chemical Company Uniroyal, Inc.
SILICONE	SILASTIC	Dow Corning Corporation

(ALLOYS)

ABS-PC	BAYBLEND CYCOLOY	Mobay Chemical Company GE Plastics
POLYPHENYLENE ETHER-STYRENE (PPE)	PREVEX	GE Plastics
POLYPHENYLENE OXIDE-STYRENE (PPO)	NORYL	GE Plastics

ACETAL

Description				Remarks	Part Number	Codes ^a		
Material	Color					ND	Cost/Lb in Truckload Quantities	ST
Celcon M90-04 Celcon M90-04 Celcon M90-04 Celcon M90-04 Celcon M90-04	Charcoal Gray CC-3277 Tek Blue CG3282 Smoke Tan Slate Gray Dove Gray	High Flow High Flow High Flow High Flow High Flow	255-0160-00 255-0173-00 255-0173-01 255-0173-03 255-0173-04		1.640 1.640 1.640 1.640 1.640	CR CR CR CR CR		
Celcon M90-04 Delrin 500 Delrin 500 Delrin 500 Delrin 500	Natural CF2001 Natural Black 602 Medium Gray 602 Brown 603	Medium Flow Medium Flow Medium Flow Medium Flow Medium Flow	255-0180-00 254-0998-00 255-0010-00 ^b 255-0014-00 255-0090-00		1.640 1.740 1.740 1.740 1.740	CR CR CR CR CR		
Delrin 500 Delrin 500 Delrin 500 Delrin 500 Delrin 500	Medium Gray 634 Medium to Dark Gray 714 Green 602 Turquoise Blue 604 Beige 601	Medium Flow Medium Flow Medium Flow Medium Flow Medium Flow	255-0109-00 255-0227-00 255-0228-00 255-0229-00 255-0230-00		1.740 1.740 1.740 1.740 1.740	CR CR CR CR DL		
Delrin 500 Delrin 500 Delrin 500 AF ^c Delrin 570 X Delrin 577	Yellow 603 Orange 602 Brown Natural 000 Black 000	Medium Flow Medium Flow Medium Flow, 20% Teflon Fiber 20% Glass Fiber Reinforced Medium, 20% Glass Fiber Reinforced	255-0231-00 255-0233-00 255-0320-00 255-0240-00 255-0207-00	N	1.740 1.740 7.980 2.070 2.070	CR CR CR CR CR		
Delrin 900 Delrin 900 Delrin 900 Delrin 900 Delrin 900	Red 601 Black 602 Natural 10 White 602 Silver Gray 754	High Flow High Flow High Flow High Flow High Flow	255-0189-00 255-0190-00 255-0197-00 255-0217-00 255-0285-00 ^b		1.740 1.740 1.740 1.740 1.740	CR CR CR CR CR		
Fulton 404 Thermocomp KF-1004 Thermocomp PDX-K-85145 ^c	Natural Medium Gray 0-015 Natural	20% Teflon Particle Filled 20% Glass Fiber Reinforced PTFE-SI Filled	255-0469-00 255-0214-00 255-0969-00	P	4.030	DL DL DL		
Properties	Unit of Measure	Celcon M90-04	Delrin 500	Delrin 570 X Delrin 577	Delrin 900	Fulton 404	Thermocomp KF-1004	ASTM Test Method
PHYSICAL PROPERTY								
Specific Gravity	g/cc	1.410	1.425	1.560	1.425	1.550	1.540	D792
Mold Shrinkage	in/in	.020	.020 - .025	.013	.020 - .025	.020	.006	D955
Melting Point	°F	329	347	347	347			
Water Absorption, 24 Hours	%	.220	.250	.250	.250	.150	.350	D570
MECHANICAL PROPERTY								
Tensile Strength, Yield	psi	8,800	10,000	8,500	10,000	10,000	12,500	D638
Elongation	%	60	12	7	12	7	2.500	D638
Tensile Modulus	psi	410,000	415,000	880,000	520,000	390,000		D638
Flexural Strength	psi	13,000	14,000	10,700	14,000	10,000	16,500	D790
Flexural Modulus	psi	375,000	415,000	730,000	430,000			D790
Impact Strength, Notched Izod	ft-lb/in	1.200	1.400	.800	1.300	.600	.800	D256
Hardness, Rockwell		M80	M94, R120	M90, R118	M94, R120	M60	M85	D785
THERMAL PROPERTY								
Linear Thermal Expansion	in/in °F	4.7 x 10 ⁻⁵	4.5 x 10 ⁻⁵	4.5 x 10 ⁻⁵	5.8 x 10 ⁻⁵	5.4 x 10 ⁻⁵	2.9 x 10 ⁻⁵	D696
Deflection Temperature								D648
at 66 psi	°F	316	338	345	338	320	330	
at 264 psi	°F	230	255	315	255	210	325	
ELECTRICAL PROPERTY								
Dielectric Strength, Short Time	V/mil	500	500	490	500			D149
Dielectric Constant								D150
at 10 ³ Hz		3.700	3.700	4.000	3.700			
at 10 ⁶ Hz		3.700	3.700	3.900	3.700			
Dissipation Factor								
at 10 ³ Hz		.001	.003	.003	.003			D150
at 10 ⁶ Hz		.006	.005	.005	.005			
UL INFORMATION ^d								
Minimum Material Thickness	in	.058 .120 .240	.058 .120 .240	.058 .120	.058 .120 .240	.062	NOT UL RECOGNIZED	
Flammability Rating UL94		HB HB HB	HB HB HB	HB HB	HB HB HB	HB		
Hot Wire Ignition		11 11 20	15 16 41	7 31	15 16 41			
High Amp Arc Ignition		200+ 200+ 200+	200+ 200+ 200+	142 200+	200+ 200+ 200+			
High Volt Track Rate		0 0 0	0 .1 .1	.2 .2	0 .1 .1			
Chemical resistance: Excellent resistance to all organic solvents unsatisfactory for continued exposure to some acids and alkalis.								

Chemical resistance: Excellent resistance to all organic solvents unsatisfactory for continued exposure to some acids and alkalis.

^a The nominal price (at time of printing) is listed in the cost column. Prices are for Truckload quantities; for further information, contact Bert Hippe, 627-2378. For ND Codes (New Design Recommendations) and Status Codes, see tab marked CODES in the back of this catalog.

^b Safety controlled.

^c Property information not available.

^d See Page 1-2 for definitions of UL terms used in Section 1.

ACRYLIC

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Plexiglas V 811 Plexiglas VS Plexiglas VS	Colorless 100 Colorless 100 Blue 48143	Optical Grade, High Heat Resistance Optical Grade, High Flow Optical Grade, High Flow	255-0099-00 255-0385-00 255-0446-00		.990 .970 .970	CR CR DL
Properties	Unit of Measure	Plexiglas V 811	Plexiglas VS	ASTM Test Method		
PHYSICAL PROPERTY Specific Gravity Mold Shrinkage Water Absorption, 24 Hours	g/cc in/in %	1.190 .004 .300	1.180 .004 .300	D792 D955 D570		
MECHANICAL PROPERTY Tensile Strength, Yield Elongation Tensile Modulus Flexural Strength Impact Strength, Notched Izod Hardness, Rockwell	psi % psi psi ft-lb/in	10,500 6.000 430,000 16,000 .400 M97	8,600 3.000 380,000 14,000 .400 M82	D638 D638 D638 D790 D256 D785		
THERMAL PROPERTY Linear Thermal Expansion Deflection Temperature at 66 psi at 264 psi	in/in °F °F °F	3.4×10^{-5} 225 214	3.6×10^{-5} 181 169	D696 D648		
ELECTRICAL PROPERTY Dielectric Strength, Short Time Dielectric Constant at 10^3 Hz at 10^6 Hz Dissipation Factor at 10^3 Hz at 10^6 Hz	V/mil	500 3.300 2.200 .040 .030	500 3.500 2.300 .040 .030	D149 D150 D150		
OPTICAL PROPERTY Refractive Index		1.490	1.490	D542		
UL INFORMATION ^b Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition	in	.058 HB 15 200 +	.125 HB 15 200 +			

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^b See Page 1-2 for definitions of UL terms used in Section 1.

ACRYLONITRILE-BUTADIENE-STYRENE (ABS)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Thermocomp AF-1004EP	Natural	20% Glass Fiber Reinforced (Plating Grade)	255-0483-00		1.370	CR
Thermocomp AF-1006	Black 8-001	30% Glass Fiber Reinforced	255-0271-00		1.350	CR
Properties	Unit of Measure	Thermocomp AF-1004EP	Thermocomp AF-1006	ASTM Test Method		
PHYSICAL PROPERTY				D792 D792 D955 D570 D570		
Specific Gravity	g/cc	1.200	1.280			
Specific Volume	in ³ /lb	23.100	21.600			
Mold Shrinkage: .125 in Average Section		.0015	.001			
.250 in Average Section		.002	.0015			
Water Absorption: 24 Hours	%	.150	.140	D638 D638 D790 D790 D695 D732-78 D256		
To Saturation	%	.700	.600			
MECHANICAL PROPERTY						
Tensile Strength, Break	psi					
73°F		13,500	14,500			
140°F		8,500	9,000	D696 D648 D621 D635		
Elongation	%	3-4	3-4			
Flexural Strength	psi	17,500	18,500			
Flexural Modulus	psi					
73°F		850,000	1,100,000			
140°F		800,000	1,000,000	D696 D648 D621 D635		
Compressive Strength	psi	13,500	14,500			
Shear Strength	psi	7,000	7,500			
Impact Strength, Izod						
Notched .250 in Bar		1.500	1.400			
Unnotched .250 in Bar	ft-lb/in	6-7	6-7	D696 D648 D621 D635		
Hardness, Rockwell	ft-lb	R124, M97	R124, M99			
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F	2.0 x 10 ⁻⁵	1.6 x 10 ⁻⁵			
Deflection Temperature	°F					
at 66 psi		225	230	D696 D648 D621 D635		
at 264 psi		215	220			
Deformation Under Load, 24 hrs.	%					
4000 psi, 50°C		.400	.300			
Flammability	in/min	S B	S B			
UL INFORMATION ^b				D696 D648 D621 D635		
Minimum Material Thickness	in	.069	.069			
Flammability Rating UL94		V-0	HB			

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^b See Page 1-2 for definitions of UL terms used in Section 1.

ACRYLONITRILE-BUTADIENE-STYRENE (ABS) (cont)

Description		Remarks	Part Number	Codes ^a			
Material	Color			ND	Cost/Lb in Truckload Quantities	ST	
Cycoloc EP Cycoloc GSM Cycoloc GSM Cycoloc GSM Cycoloc GSM	Light to Medium Gray 3510 Black 4500 Medium Gray 3727 Appliance White 2502 Yellow 7500	Plating Grade General Purpose Grade General Purpose Grade General Purpose Grade General Purpose Grade	255-0161-00 255-0009-00 ^b 255-0015-00 255-0095-00 ^b 255-0220-00		1.370 1.370 1.430 1.390 1.430	CR CR CR CR CR	
Cycoloc GSM Cycoloc GSM Cycoloc GSM Cycoloc GSM Cycoloc GSM	Silver Gray 30765 Blue 52168 Smoke Tan 85566 Earth Brown 85567 Slate Gray 32877	General Purpose Grade General Purpose Grade General Purpose Grade General Purpose Grade General Purpose Grade	255-0376-00 255-0644-00 255-0644-01 255-0644-02 255-0644-03 ^b		1.430 1.430 1.430 1.430 1.430	CR CR CR CR CR	
Cycoloc GSM Cycoloc GSM Cycoloc GSM Cycoloc GSM Cycoloc GSM-F	Flint Gray Ivory Gray Dove Gray Spruce Green 9500 Silver Gray 30765/DRF	General Purpose Grade General Purpose Grade General Purpose Grade General Purpose Grade General Purpose Grade	255-0644-04 255-0644-05 255-0644-06 255-0811-00 255-1045-00		1.430 1.430 1.430 	CR CR CR DL DL	
Properties		Unit of Measure	Cycoloc EP		Cycoloc GSM/GSM-F		ASTM Test Method
PHYSICAL PROPERTY							D792 D955 D570
Specific Gravity	g/cc	1.070	1.040				
Mold Shrinkage	in/in	.006 - .008	.007				
Water Absorption, 24 Hours	%	.400	.430				
MECHANICAL PROPERTY							D638 D638 D638 D790 D790 D256 D785
Tensile Strength, Yield	psi	6,100	6,300				
Tensile Strength, Break	psi		6,000				
Tensile Modulus	psi	330,000	320,000				
Flexural Strength	psi	10,500	10,500				
Flexural Modulus	psi						
Impact Strength, Notched Izod	ft-lb/in	5.300	7.000				
Hardness, Rockwell		R103	R102				
THERMAL PROPERTY							D696 D1525 D648
Linear Thermal Expansion	in/in °F	5.3 x 10 ⁻⁵	5.28 x 10 ⁻⁵				
Vicat Softening Point	°F	217	222				
Deflection Temperature (Unannealed)							
at 66 psi	°F	206	208				
at 264 psi	°F	192	192				
ELECTRICAL PROPERTY							D150
Dielectric Constant							
at 10 ³ Hz		2.910	2.810				
at 10 ⁶ Hz		2.440	2.760				
Dissipation Factor							
at 10 ³ Hz		.006	.007				
at 10 ⁶ Hz		.008	.010				
UL INFORMATION ^c							
Minimum Material Thickness	in	.058 .120 .240	.058 .120 .240				
Flammability Rating UL94		HB HB HB	HB HB HB				
Hot Wire Ignition		15 13 14	11 12 14				
High Amp Arc Ignition		200+ 200+ 200+	200+ 200+				
High Volt Track Rate		2.4 1.1 1.0	3.1				

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

ACRYLONITRILE-BUTADIENE-STYRENE (ABS) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Cyclocac T	Tek Blue 50454	General Purpose Grade	255-0134-00		1.390	CR
Cyclocac T	Orange 70314	General Purpose Grade	255-0683-00		1.390	DL
Cyclocac T	Blue 51997	General Purpose Grade	255-0693-00		1.390	DL
Cyclocac T	TV Gray 32670	General Purpose Grade	255-0701-00		1.390	DL
Cyclocac T	Gray Beach 30350	General Purpose Grade	255-0875-00		1.390	DL
Cyclocac X-11	Red 60076	High Heat Resistant & Tough	255-0219-00 ^b		1.520	CR
Cyclocac X-11	Medium Gray 30950	High Heat Resistant & Tough	255-0302-00		1.520	DL
Cyclocac X-11	Green 90495	High Heat Resistant & Tough	255-0312-00		1.520	CR
Cyclocac X-11	Red 6500	High Heat Resistant & Tough	255-0313-00		1.520	CR
Cyclocac X-11	Charcoal Gray 3649	High Heat Resistant & Tough	255-0081-00		1.520	CR
Cyclocac X-11	New Generation Gray 3807	High Heat Resistant & Tough	255-0113-00		1.520	CR
Cyclocac DFA-R	Slate Gray 3287	High Flow	255-0909-00		1.350	DL
Cyclocac DFA-R	Smoke Tan 86983		255-1037-00			DL
Properties		Unit of Measure	Cyclocac T	Cyclocac X-11	Cyclocac DFA-R	ASTM Test Method
PHYSICAL PROPERTY						
Specific Gravity	g/cc	1.040	1.040	1.040	1.040	D792
Mold Shrinkage	in/in °F	.006 - .008	.006 - .008	.006 - .008	.006 - .008	D955
Recommended Processing Temperature	°F				425 - 500	
Water Absorption, 24 Hours	%	.400				D570
MECHANICAL PROPERTY						
Tensile Strength, Yield	psi	6,000	6,000	6,200		D638
Tensile Strength, Break	psi	6,000				D638
Tensile Modulus	psi	330,000	330,000	340,000		D638
Flexural Strength	psi	10,500	10,000			D790
Flexural Modulus	psi	330,000	310,000	360,000		D790
Impact Strength, Notched Izod	ft-lb/in	6.500	6.000	4.000		D256
Hardness, Rockwell		R103	R100	R108		D785
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F	5.3 x 10 ⁻⁵	5.1 x 10 ⁻⁵	4.9 x 10 ⁻⁵		D696
Vicat Softening Point	°F	218				D1525
Deflection Temperature (Unannealed)						D648
at 66 psi	°F	203	223	201		
at 264 psi	°F	188	204	184		
ELECTRICAL PROPERTY						
Dielectric Strength, Short Time	V/mil			821		
Dielectric Constant						D150
at 10 ³ Hz		.006				
at 10 ⁶ Hz			.008			
UL INFORMATION ^c						
Minimum Material Thickness	in	.058 .120 .240	.058 .120 .240	.058 .120		
Flammability Rating UL94		HB HB HB	HB HB HB	HB HB		
Hot Wire Ignition		13 17 21	13 16 14	18 25		
High Amp Arc Ignition		200+ 200+ 200+	200+ 200+ 200+	200+ 200+		
High Volt Track Rate		6.7 5.1 4.0	2.0 1.7 1.2	1.3 1.2		

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

ACRYLONITRILE-BUTADIENE-STYRENE (ABS) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Cycloc FBK	Black 4083	Fire Retardant Structural Foam	255-0812-00		1.350	DL
Cycloc KJB	White 30715	Fire Retardant	255-0244-00 ^b		1.510	DL
Cycloc KJB	Black 4051	Fire Retardant	255-0550-00		1.490	DL
Cycloc KJB	Silver Gray 30765	Fire Retardant	255-0755-00		1.570	DL
Cycloc KJB	Slate Gray 32817	Fire Retardant	255-0907-00		1.570	DL
Cycloc KJM	Natural	Fire Retardant	255-0923-00		1.510	DL
Cycloc KJM	Smoke Tan 86983	Fire Retardant	255-1038-00		1.600	DL
Properties	Measure	Cycloc FBK	Cycloc KJB	Cycloc KJM	ASTM Test Method	
PHYSICAL PROPERTY					D792-66 Method A D955	
Specific Gravity	g/cc	≤ .900	1.210	1.200		
Mold Shrinkage	in/in	.005 - .008	.007	.500 - .008		
MECHANICAL PROPERTY						
Tensile Strength, Yield	psi	1,900-3,900	5,800			
Tensile Modulus	psi	≤ 250,000	320,000	350,000	D638-68 D638-68 D790-66 D790-66 D256-56 D785-65	
Flexural Strength	psi	4,200-7,800	10,000	12,500		
Flexural Modulus	psi	210,000-280,000	330,000	400,000		
Impact Strength, Notched Izod	ft-lb/in		4.000			
Hardness, Rockwell		R60-70	R97	R11		
THERMAL PROPERTY					D696 D648-56 D648-56	
Linear Thermal Expansion	in/in °F		5.3 x 10 ⁻⁵			
Deflection Temperature						
Annealed at 66 psi	mil Deflection °F at 10		220			
Annealed at 264 psi			210			
Deflection Temperature					D648-56	
Unannealed at 66 psi	mil Deflection °F at 10	≤ 190	198			
Unannealed at 264 psi		≤ 180	180	201		
UL INFORMATION ^c						
Minimum Material Thickness	in	.240 .360	.058 .120 .240	.125	3.6	
Flammability Rating UL94		V-0 V-0	V-0 V-0 V-0	V-0		
Hot Wire Ignition		48 73	30 87+ 24			
High Amp Arc Ignition		200+ 200+ 37+	200+ 200+ 200+			
High Volt Track Rate		16 13 8.5	11.0 9.0			

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

FLUOROCARBON (TFE)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Teflon 100	Natural	Extrusion/Injection Grade	255-0140-00		9.000	CR
Properties	Unit of Measure	Teflon 100			ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Melting Point Water Absorption, 24 Hours Weather Resistance Chemical Resistance	g/cc °F %	2.120-2.170 495 - 520 < .010 Excellent Excellent			D2116-62T D2116-62T D570-63	
MECHANICAL PROPERTY Tensile Strength, Break Elongation Flexural Modulus Hardness, Shore	psi % psi	3,000 300 95,000 D55			D2116-62T D2116-62T D790-63 D1706-61	
ELECTRICAL PROPERTY Volume Resistivity Dielectric Strength, Short Time, 10 mil Dielectric Constant Dissipation Factor (60-109 cps.)	Ω-cm V/mil 50-100 Hz	1.0 x 10 ¹⁸ 2,100 2,100 .0002-.0007			D257-61 D149-64 D150-64T D150-64T	
UL INFORMATION ^b Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition High Volt Track Rate	in	.034 V-0 25 200+ 0			.104 V-0 71 200+ 0	

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Tefzel HT-2004	Natural	Injection Grade, 25% G655 Filled	255-0771-00			DL
Properties	Unit of Measure	Tefzel HT-2004			ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Melting Point Water Absorption, 24 Hours	g/cc °F %	1.860 520. .022			D792 D570	
MECHANICAL PROPERTY Tensile Strength, Break Elongation Tensile Modulus Flexural Modulus Compressive Strength Impact Strength, Notched Izod Hardness, Rockwell	psi % psi psi psi ft-lb/in	12,000 8 12,000 95,000 10,000 9 R74			D638 D638 D638 D790 D695 D256	
THERMAL PROPERTY Thermal Conductivity Specific Heat Linear Thermal Expansion Deflection Temperature at 66 psi at 264 psi Continuous Use Temperature (No Load)	Btu in/hr/ft ² /°F Btu/lb °F in/in °F °F °F 392	1.660 .460-.470 1.7 x 10 ⁻⁵ 510 410			C177 C351 D696 D648-56	
UL INFORMATION		NOT UL RECOGNIZED				

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^b See Page 1-2 for definitions of UL terms used in Section 1.

FLUOROCARBON (TFE) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Halar 500	Natural		255-0782-00		12.400	CR
Properties		Unit of Measure	Halar 500		ASTM Test Method	
PHYSICAL PROPERTY						
Specific Gravity		g/cc	1.680		D792	
Mold Shrinkage		in/in	< 0.025		D570	
Water Absorption, 24 Hours		%	< 0.100			
MECHANICAL PROPERTY						
Tensile Strength, Yield		psi	4,500		D638	
Tensile Strength, Break		psi	7,000		D639	
Elongation		%	200		D638	
Tensile Modulus		psi	240,000		D638	
Flexural Strength		psi	70,000		D790	
Flexural Modulus		psi	240,000		D790	
Impact Strength, Notched Izod		ft-lb/in	No Break		D256	
Hardness, Rockwell			R93			
THERMAL PROPERTY						
Linear Thermal Expansion		in/in °F	8.0 x 10 ⁻⁵		D696	
Deflection Temperature					D648	
at 66 psi		°F	239			
at 264 psi		°F	169			
Heat Distortion						
at 66 psi		°F	240			
at 264 psi		°F	170			
ELECTRICAL PROPERTY						
Dielectric Strength		V/mil	2,000		D149-64T	
Dielectric Constant					D150-64T	
at 10 ³ Hz			2.500			
at 10 ⁶ Hz			2.500			
Dissipation Factor					D150-64T	
at 10 ³ Hz			.003			
at 10 ⁶ Hz			.009			
UL INFORMATION ^b						
Minimum Material Thickness		in	.007	.058	.120	
Flammability Rating UL94			V-0	V-0	V-0	
Hot Wire Ignition				31	31	
High Amp Arc Ignition				200 +	200 +	
High Volt Track Rate				2.4	2.4	

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^b See Page 1-2 for definitions of UL terms used in Section 1.

METHYLPENTENE POLYMER

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
TPX-RT-18	Natural	Transparent	255-0466-00		2.300	DL
Properties		Unit of Measure	TPX-RT-18		ASTM Test Method	
PHYSICAL PROPERTY						
Specific Gravity		g/cc	.835		D1505	
Mold Shrinkage		in/in	.015-.030		D955	
Melting Point		°F	455			
Water Absorption, 24 Hours		%	.010		D570	
MECHANICAL PROPERTY						
Tensile Strength, Yield		psi	3,560		D638	
Elongation		%	40		D638	
Flexural Modulus		psi	18,000		D790	
Impact Strength, Notched Izod		ft-lb/in	.550		D256	
Hardness, Rockwell			R80		D785	
THERMAL PROPERTY						
Thermal Conductivity		Btu in/hr/ft ² /°F	1.160		C177	
Specific Heat		Btu/lb °F	.470		C351	
Linear Thermal Expansion		in/in °F	6.5x 10 ⁻⁵		D696	
Flammability		in/min	1.		D635	
ELECTRICAL PROPERTY						
Volume Resistivity		Ω/cm	1.0 x 10 ¹⁶		D257	
Dielectric Strength		V/mil	700		D149	
Dielectric Constant			2.120		D150	
10 ² -10 ⁶ Hz						
UL INFORMATION ^b						
Minimum Material Thickness		in	.031	.062	.120	
Flammability Rating UL94			HB	HB	HB	
Hot Wire Ignition			10	15	33	
High Amp Arc Ignition			200+	200+	200+	
High Volt Track Rate			.1	.1	.1	

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^b See Page 1-2 for definitions of UL terms used in Section 1.

POLYALLOMER

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Tenite M7853	Natural 146E	Extrusion Grade	255-0359-00		.605	CR
Properties		Unit of Measure	Tenite M7853		ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Melt Flow		g/cc g/10 min	.896 2.000		D1505 D1238L D638 D747 D256 D785 B1525 D648	
MECHANICAL PROPERTY Tensile Strength, Yield Stiffness in Flexure Impact Strength, Izod Notched, at 23°C (73°F) Unnotched, at 23°C (73°F) Unnotched, at -18°C (0°F) Hardness, Rockwell		psi psi ft-lb/in ft-lb/in ft-lb/in	3,450 85,000 6.000 No Break 8.000 R56			
THERMAL PROPERTY Vicat Soft Point Deflection Temperature at 66 psi at 264 psi		°C °F °F	125 122 50			
UL INFORMATION			NOT UL RECOGNIZED			

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POLYAMIDE (NYLON) (PA)

Description		Nylon Type	Remarks	Part Number	Codes ^a		
Material	Color				ND	Cost/Lb in Truckload Quantities	ST
Nylafil J-1/30	Lt. to Med. Gray 1981	6/6	30% Glass Fiber Reinforced	255-0026-00		2.190	CR
Nylafil J-1/30	Black 223	6/6	30% Glass Fiber Reinforced	255-0117-00		2.190	CR
Nylafil J-1/30/FR	Silver Gray Gy-4265	6/6	30% Glass Fiber Reinforced, Fire Retardant	255-0548-00 ^b		2.670	CR
Nylafil J-4/30/FR	Black BK-2989	6/12	30% Glass Fiber Reinforced Fire Retardant	255-0625-00		3.250	CR
Nylafil J-4/30/FR	Natural	6/12	30% Glass Fiber Reinforced, Fire Retardant	255-0634-00 ^b		3.250	DL
Thermocomp RF-1006-ER	Smoke Tan BN7-831	6/6	30% Glass Fiber Reinforced	255-0026-01		2.130	CR
Thermocomp RFL-4044	Black	6/6	20% PTFE, 20% Glass Fiber Reinforced	255-1022-00		3.700	DL
Properties	Unit of Measure	Nylafil J-1/30	Nylafil J-1/30/FR	Nylafil J-4/30/FR	Thermocomp RF-1006-ER	Thermocomp RFL-4044	ASTM Test Method
PHYSICAL PROPERTY							
Specific Gravity	g/cc	1.420	1.600	1.600	1.590	1.430	D792-60T
Mold Shrinkage							D955
In .125 in Average Section	in/in	.003		.002	.003	.005	
In .250 in Average Section	in/in	.004		.006			
In .500 in Average Section	in/in	.005	.005				
Melting Point	°F	495		405			D789-62T
Water Absorption, 24 Hours	%	.900	.600	.130	.500	.600	D570-63
MECHANICAL PROPERTY							
Tensile Strength, Break	psi	23,000	16,000	16,500	21,500	16,000	D638-61T
Elongation	%	1.900	2.100	3.200	3-4	3-4	D638-61T
Tensile Modulus	psi	130,000		110,000			D638-61T
Flexural Strength	psi	26,000	27,000	28,000	30,000	23,000	D790-63
Flexural Modulus	psi	950,000		1,400,000	1,150,000	850,000	D790-63
Compressive Strength	psi	28,000		21,000	24,000		D695-63T
Shear Strength	psi	11,000					D732-78
Impact Strength, Izod	ft-lb/in						
Notched		1.500	1.600	1.500	1.600	1.100	D256-56
Unnotched						7-8	D256-56
Hardness, Rockwell		E60-70		M89	M96		
THERMAL PROPERTY							
Linear Thermal Expansion	in/in °F	2.1×10^{-5}		1.0×10^{-5}	1.8×10^{-5}		D696-44
Deflection Temperature, at 264 psi	°F	485	420	370	470	475	D648-56
ELECTRICAL PROPERTY							
Volume Resistivity	$\Omega\text{-cm}$	1.0×10^{16}			3.8×10^{13}		D257
Dielectric Strength	V/10 ⁻³ in	500			420		D149
Dielectric Constant at 100 Hz		4.100			4.560		D150
at 10 ³ Hz		4.000			4.260		
UL INFORMATION ^c							
Minimum Material Thickness	in	.032	.028	.062	NOT UL RECOGNIZED	NOT UL RECOGNIZED	
Flammability Rating UL94		V-0	V-0	V-0			
Hot Wire Ignition		300+	300+	200			
High Amp Arc Ignition		200+	200+	200+			
High Volt Track Rate		14	14	6.7			

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYAMIDE (NYLON) (PA) (cont)

Description		Nylon Type	Remarks	Part Number	Codes ^a				
Material	Color				ND	Cost/Lb in Truckload Quantities	ST		
Capron 8202	Black 102	6		254-0987-00		2.210	CR		
Capron 8202	Light to Medium Gray 151	6		255-0007-00		2.210	CR		
Nylafil J-4/40	Black 223	6/12	40% Glass Fiber Reinforced	255-0172-00		2.920	CR		
Nylafil J-4/40	Silver Gray 4510	6/12	40% Glass Fiber Reinforced	255-0387-00		2.920	CR		
Nylafil J-4/40	Smoke Tan	6/12	40% Glass Fiber Reinforced	255-0387-01		2.920	CR		
Nylafil J-4/40	Tek Blue 4758	6/12	40% Glass Fiber Reinforced	255-0471-00		2.920	DL		
Zytel 31	Natural 10	6/10		255-0365-00			DL		
Zytel 101	White 11	6/6		254-0940-00		2.130	CR		
Zytel 101	Red 601	6/6		255-0033-00		2.130	CR		
Zytel 101	Dark Gray 48	6/6		255-0050-00		2.130	CR		
Zytel 101L	Medium Gray 07	6/6		254-0995-00		2.130	CR		
Zytel 105	Black 10	6/6	Weather Stabilized	254-0925-00		2.130	CR		
Thermocomp IF-1008-ER	Dove Gray GY0920	6/12	40% Glass Fiber Reinforced	255-0387-03		2.910	CR		
Properties		Unit of Measure	Capron 8202	Nylafil J-4/40	Zytel 31	Zytel 101/101L	Zytel 105	Thermocomp IF-1008-ER	ASTM Test Method
PHYSICAL PROPERTY									
Specific Gravity	g/cc		1.130	1.430	1.070-1.090	1.140	1.140	1.400	D792
Mold Shrinkage	in/in		.013	.004 - .0015	.015	.015	.015	.0003	D955
Melting Point	°F		410 - 435			520			D789
Water Absorption, 24 Hours	%		1.600	.170	.400	1.200	1.200	.180	D570
MECHANICAL PROPERTY									
Tensile Strength, Yield	psi		11,800	28,000	8,500	12,000	13,100	76,000	D638
Elongation	%		9	2.200	85	52	30	2 - 3	D638
Tensile Modulus	psi		340,000			200,000	400,000		D638
Flexural Strength	psi		15,700	34,000	280,000			39,000	D790
Flexural Modulus	psi		405,000	1,500,000		400,000	191,000	1,300,000	D790
Impact Strength, Notched Izod	ft-lb/in		1.000	4.500	.600	> 1.000	2.000	3.200	D256
Hardness, Rockwell			R119	E55-65	R111	R121	R121	M93	D785
THERMAL PROPERTY									
Linear Thermal Expansion	in/in °F		4.6 x 10 ⁻⁵	1.4 x 10 ⁻⁵	5.0 x 10 ⁻⁵	4.5 x 10 ⁻⁵	4.0 x 10 ⁻⁵	1.2 x 10 ⁻⁵	D696
Deflection Temperature	°F		320	440	300	455	464	435	D648
at 66 psi	°F		147	426	135	194	194	420	D638
ELECTRICAL PROPERTY									
Dielectric Strength	V/mil		420	500		385	385	420	D149
Short Time									D150
Dielectric Constant									
at 10 ³ Hz			3.700	4.200	3.600	3.900	3.900	3.900	
at 10 ⁶ Hz			3.400	4.000	3.500	3.600	3.600	3.900	
Dissipation Factor									D150
at 10 ³ Hz			.020	.014	.040	.020	.020	.018	
at 10 ⁶ Hz			.030	.016	.030	.040	.040	.016	
UL INFORMATION ^b									
Minimum Material Thickness	in		.058 .120 .240	.062 .125	NOT UL RECOGNIZED	.028 .058 .120 .240	.028 .058 .120 .240	NOT UL RECOGNIZED	
Flammability Rating UL94			V-2 V-2 V-2	V-2 V-2		V-2 V-2 V-2 V-2	V-2 V-2 V-2 V-2		
Hot Wire Ignition			21 32 33			11.8 15 35 35	11.8 15 35 35		
High Amp Arc Ignition			200+ 200+ 200+			200+ 186 182 200+	200+ 186 182 200+		
High Volt Track Rate			.3 .2 .2			2 4 4	2 4 4		
Chemical resistance: Resistant to common organic solvents, oils, greases, etc.--slowly attacked by strong acids and oxidizing agents.									

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^b See Page 1-21 for definitions of UL terms used in Section 1.

POLYAMIDE (NYLON) (PA) (cont)

Description		Nylon Type	Remarks	Part Number	Codes ^a		
Material	Color				ND	Cost/Lb in Truckload Quantities	ST
Thermocomp IF-1004	White WH-9-033	6/12	20% Glass Fiber Reinforced	255-0303-00		3.240	CR
Thermocomp IFL-4536	Black 8-115	6/12	30% Glass Fiber Reinforced, 13% Teflon, 2% Silicone, Flame Retardant	255-0745-00 ^b		4.550	DL
Thermocomp QF-1004	Tek Blue 5-808	6/10	20% Glass Fiber Reinforced	255-0368-00		3.240	DL
Thermocomp QF-1004	Black 8-085	6/10	20% Glass Fiber Reinforced	255-0294-00		3.240	CR
Thermocomp RF-1006	Slate Gray	6/6	30% Glass Fiber Reinforced	255-0822-00		2.130	CR
Zytel 70G-33L	Black 31	6/6	33% Glass Fiber Reinforced	255-0332-00 ^b		2.220	CR
Properties	Unit of Measure	Thermocomp IF-1004	Thermocomp IFL-4536	Thermocomp QF-1004	Thermocomp RF-1006	Zytel 70G-33L	ASTM Test Method
PHYSICAL PROPERTY							
Specific Gravity	g/cc	1.210	1.410	1.220	1.370	1.380	D792
Mold Shrinkage	in/in	.004	.003	.004	.004	.0025	D955
Water Absorption, 24 Hours	%	.220	.120	.220	.900	1.000	D750
MECHANICAL PROPERTY							
Tensile Strength, Yield	psi	18,000	20,000	18,000	26,000	27,000	D638
Tensile Strength, Break	psi						D638
Elongation	%	5-6	3-4	3-4	3-4	3	D638
Flexural Strength	psi	28,000	25,000	26,000	38,000	38,500	D790
Flexural Modulus	psi	900,000	950,000	900,000	1,300,000	1,300,000	D790
Impact Strength, Izod (.125)	ft-lb/in	1.100	2.000	1.100	2.000	2.000	D256
Hardness, Rockwell		M89	R100	M89	M96	M101	D785
THERMAL PROPERTY							
Linear Thermal Expansion	in/in °F	2.2 x 10 ⁻⁵	2.7 x 10 ⁻⁵	2.2 x 10 ⁻⁵	1.8 x 10 ⁻⁵	1.3 x 10 ⁻⁵	D696
Deflection Temperature at 264 psi	°F	410	400	410	490	480	D648
UL INFORMATION ^c	in	NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED	.120 HB 11 180 .8	.028 HB 7 200+ .6	.120 HB 9 200+ .5

Description		Nylon Type	Remarks	Part Number	Codes ^a		
Material	Color				ND	Cost/Lb in Truckload Quantities	ST
Nylatron GS	Natural (Charcoal Gray)	6/6	Molydisulphide Filled	255-0378-00		2.500	CR
Nylatron G5-51	Natural (Charcoal Gray)	6/6	Molydisulphide Filled, (30% Glass)	255-0539-00			DL
Properties	Unit of Measure	Nylatron GS		Nylatron G5-51		ASTM Test Method	
PHYSICAL PROPERTY							
Specific Gravity	g/cc	1.170		1.400		D792	
Melting Point	°F	496 ± 9		489 ± 9		D789	
Water Absorption, 24 Hours	%	1.000		.600		D570	
MECHANICAL PROPERTY							
Tensile Strength, Break	psi	13,800		21,000		D638	
Elongation	%	13		7.5		D638	
Flexural Strength	psi	16,800		29,000		D790	
Hardness, Rockwell		R119		R119		D785	
THERMAL PROPERTY							
Linear Thermal Expansion	in/in °F	3.6 x 10 ⁻⁵		1.6 x 10 ⁻⁵		D696	
Deflection Temperature at 264 psi	°F	230		485		D648	
ELECTRICAL PROPERTY							
Dielectric Strength						D149	
Short Time	V/mil	300 - 400					
UL INFORMATION ^c	in			NOT UL RECOGNIZED			
Minimum Material Thickness		.058 .120 .240					
Flammability Rating UL94		V-2 V-2 V-2					
Hot Wire Ignition		19 42 63					
High Amp Arc Ignition		200+ 200+ 200+					
High Volt Track Rate		.5 .5 .4					

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYCARBONATE (PC)

Description						Part Number	Codes ^a		
Material	Color	Remarks					ND	Cost/Lb in Truckload Quantities	ST
Stat-Kon DC-1003 Thermocomp DF-1003 Thermocomp DF-1004 M Thermocomp DF-1004 Thermocomp DF-1004	Black Light to Medium Gray 0-0652 Medium Gray 0-015 Tek Blue 5-565 Medium Gray GY0-897	15% Carbon Glass Fiber Reinforced 15% Glass Fiber Reinforced 20% Glass Fiber Reinforced, Milled Glass Fiber 20% Glass Fiber Reinforced 20% Glass Fiber Reinforced	255-0696-00 255-0308-00 255-0235-00 255-0423-00 255-0804-00		9.750 2.820 2.820 2.820 2.820	DL CR CR DL DL			
Thermocomp DF-1004	Gray GY0-761	20% Glass Fiber Reinforced Color Matched to 255-0302-00	255-0968-00		2.820	DL			
Thermocomp DF-1004 Thermocomp DF-1004 Thermocomp DF-1004	New Generation Gray 0-312 Gray GY0-378 Dove Gray GY0-885	20% Glass Fiber Reinforced 20% Glass Fiber Reinforced 20% Glass Fiber Reinforced	255-0532-00 ^b 255-0654-00 255-0825-00		2.820 2.820 2.820	CR DL CR			
Thermocomp DF-1004 Thermocomp DFA-113-V1 Thermocomp DFA-113 Thermocomp DFA-113 Thermocomp DFA-113	Silver Gray GY0-890 Tek Tan GY0-190 Tek Blue BL5-548 Smoke Tan BN7-320 Earth Brown BN7-321	20% Glass Fiber Reinforced 10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant	255-0832-00 255-0710-00 255-0617-00 255-0617-01 255-0617-02 ^b		2.820 2.190 2.190 2.190 2.190	DL DL DL DL DL			
Thermocomp DFA-113 Thermocomp DFA-113 Thermocomp DFA-113 Thermocomp DFA-113 Thermocomp DFA-113	Slate Gray GY0-983 Ivory Gray GY0-984 Black BK8-114 Natural TV Gray GY0-971	10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant 10% Glass Fiber Reinforced, Fire Retardant	255-0617-03 255-0617-04 ^b 255-0984-00 255-0985-00 255-0773-00		2.190 2.190 2.190 2.190 2.190	DL DL DL DL DL			
Thermocomp DFL-4034 Thermocomp DFL-4034 Thermocomp DFL-4034 Thermocomp DFL-4536	Natural Black 8114 New Generation Gray 0-312 Black BK8-120	20% Glass Fiber Reinforced, 15% Teflon Filled 20% Glass Fiber Reinforced, 15% Teflon Filled 20% Glass Fiber Reinforced, 15% Teflon Filled 30% Glass Fiber Reinforced, 13% Teflon Filled, 2% Silicone Filled	255-0470-00 255-0470-01 255-0700-00 ^b 255-0744-00		3.680 3.680 3.680 3.680	DL DL DL DL			
Thermocomp DL-4020 Thermocomp DL-4020 Thermocomp DL-4020 Thermocomp DL-4020	Natural Blue BL5-477 Slate Gray GY0-982 Flint Gray GY5-154	10% Teflon Filled 10% Teflon Filled 10% Teflon Filled 10% Teflon Filled	255-0504-00 255-0612-00 255-0612-03 255-0612-04		3.730 3.730 3.730 3.730	CR DL DL DL			
Properties	Unit of Measure	Stat-Kon DC-1003/ Thermocomp DF-1003	Thermocomp DF-1004 DF-1004 M	Thermocomp DFA-113 DFA-113-V1	Thermocomp DFL-4034	Thermocomp DFL-4536	Thermocomp DL-4020	ASTM Test Method	
PHYSICAL PROPERTY									
Specific Gravity	g/cc	1.310	1.340	1.250	1.450	1.530	1.260	D792	
Mold Shrinkage	in/in	.001 - .002	.0015	.003	.001 - .002		.005 - .007	D955	
Melting Point	°F			600				D789	
Water Absorption 24 Hours	%	.110	.090	.110	.080	.050	.130	D570	
MECHANICAL PROPERTY									
Tensile Strength, Break	psi	14,000	16,000	10,000	14,500	16,500	7,500	D638	
Elongation	%	4-6	4-6	5	4-6	4-5	30	D638	
Tensile Modulus	psi		1,000,000					D638	
Flexural Strength	psi	22,000	25,000	16,000	21,000	25,000	10,000	D790	
Flexural Modulus	psi	700,000	850,000	500,000	800,000	1,100,000	300,000	D790	
Impact Strength, Izod								D256	
Notched (.250 inch)	ft-lb/in	2.800	3.400	2.300	1.800	2.400	2.500		
Unnotched, (.250 inch)	ft-lb/in	12-14		30-40	8-10	12-14	35		
Hardness, Rockwell			M92	R115	M70, R118	R120		D785	
THERMAL PROPERTY									
Linear Thermal Expansion	in/in °F	1.7 x 10 ⁻⁵	1.5 x 10 ⁻⁵	1.8 x 10 ⁻⁵	1.8 x 10 ⁻⁵	1.5 x 10 ⁻⁵	3.9 x 10 ⁻⁵	D696	
Thermal Conductivity	Btu in/hr/ ft ² /°F	2.000	2.300	1.700	2.000		1.300	C177	
Deflection Temperature at 264 psi	°F	295	300	290	290	285	270	D648	
UL INFORMATION ^c									
Minimum Material Thickness	in	.061 .120	.061 .120	.062	.062 .250	.062	.067 .071 .260		
Flammability Rating UL94		V-1 V-1	V-1 V-1	V-0	V-1 V-0	HB	V-0 V-0 V-2		
Hot Wire Ignition		300+ 300+	300+ 300+						
High Amp Arc Ignition		6 31	6 31						
High Volt Track Rate		6.3 7.7	6.3 7.7						

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYCARBONATE (PC) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Thermocomp DF-1006	Black	30% Glass Fiber Reinforced	255-1043-00		2.770	DL
Properties		Unit of Measure	Thermocomp DF-1006		ASTM Test Method	
PHYSICAL PROPERTY						
Specific Gravity		g/cc	1.430		D792	
Mold Shrinkage		in/in	.002		D955	
Water Absorption						
24 Hours		%	.070			
Long Term		%	.180			
MECHANICAL PROPERTY						
Tensile Strength						
Yield 10 ³		psi	18,500		D638	
Elongation, Yield		%	5.000		D638	
Flexural Strength, Yield			28,000		D790	
Compressive Stress			22,000			
Tensile Modulus			13,750		D638	
Flexural Modulus			1,200,000		D790	
Impact Strength, Izod						
Notched		ft-lb/in	3.700			
Hardness, Rockwell/Barcol			R118		D785	
THERMAL PROPERTY						
Linear Thermal Expansion		in/in °F	1.3 x 10 ⁻⁵		D696	
Thermal Conductivity		Btu in/hr/ft ² /°F	2.500		C177	
Deflection Temperature						
at 66 psi			305			
at 264 psi			300		D648	
ELECTRICAL PROPERTIES						
Dielectric Strength, Short Time		V/mil	480		D149	
Dielectric Constant						
at 60 Hz			3.500			
at 1 MHz		3.430				
Dissipation Factor						
at 60 Hz			.0010			
at 1 MHz			.0075			
Volume Resistivity		Ω/cm	6,000 ¹⁵			
Arc Resistance		sec	120			
UL INFORMATION ^b						
Minimum Material Thickness		in	.061		.120	
Flammability Rating UL94			V-1		V-1	
Hot Wire Ignition			6		31	
High Amp Arc Ignition			300 +		300 +	
High Volt Track Rate			6.3		7.7	

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^b See Page 1-2 for definitions of UL terms used in Section 1.

POLYCARBONATE (PC) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Makrolon 2558	Clear 1112	UV Transparent	255-0871-00		2.252	DL
Makrolon 2503	Blue Transparent 8603	Opt Grade-UV Stable	255-0688-00		2.342	DL
Makrolon 2503	Clear 1040	Opt Grade-UV Stable	255-0339-00		2.342	CR
Makrolon 2503	Green SM955A	Opt Grade-UV Stable	255-0438-00		2.342	CR
Makrolon 2503	Amber 6801	Opt Grade-UV Stable	255-0443-00		2.342	DL
Makrolon 2503	Blue 8819	Opt Grade-UV Stable	255-0444-00		2.342	DL
Makrolon 2503	Smoke Gray 2827	Opt Grade-UV Stable	255-0445-00		2.342	DL
Makrolon 2507	Blue SM1397A	Opaque, UV Stable	255-0488-00		2.360	DL
Makrolon 2607	Smoke Tan 2115	Opaque, UV Stable	255-0488-01 ^b		2.360	CR
Makrolon 2607	Earth Brown 4176	Opaque, UV Stable	255-0488-02		2.360	CR
Makrolon 2607	Slate Gray 2117	Opaque, UV Stable	255-0488-03		2.360	CR
Makrolon 2607	Ivory Gray 2121	Opaque, UV Stable	255-0488-04		2.360	DL
Makrolon 2607	Dove Gray 2122	Opaque, UV Stable	255-0488-05		2.360	CR
Makrolon 2607	Black 701		254-0979-00		2.360	CR
Makrolon FCR2407	Slate Gray 2117	High Flow	255-0957-00		2.430	DL
Makrolon FCR2407	Dark Red 7881	Opt Grade-UV Stable, IR Transparent	255-0826-00		2.410	DL
Calibre 300-15	Black	High Flow	255-0977-00		2.090	CR
Calibre 300-15	Flint Gray	High Flow	255-1001-00		2.090	CR
Properties	Unit of Measure	Makrolon 2558, 2503, 2507	Makrolon 2607	Makrolon FCR2407	Calibre 300-15	ASTM Test Method
PHYSICAL PROPERTY						
Specific Gravity	g/cc	1.200	1.200	1.200	1.200	D792
Mold Shrinkage	in/in	.005 - .007	.005 - .007	.006-.008	.005-.007	D955
Melt Flow		15	11	19	15	
Recommended Processing Temperature				350-390	350-390	
Vicat Point				304	309	
Water Absorption						
24 Hours	%	.120	.120	.110	.150	D570
Long Term				.260		
MECHANICAL PROPERTY						
Tensile Strength, Yield	psi	9,800	9,600	8,900	9,100	D638
Tensile Break				9,900	10,300	
Elongation, Yield	%	115	120	5	7	D638
Elongation, Break	%			130	150	D638
Flexural Strength, Yield	psi	12,500	12,500	12,100	14,000	D790
Compressive Strength				11,200	10,000	
Tensile Modulus	psi				340,000	
Flexural Modulus	psi	300,000 - 350,000	320,000 - 350,000	334,000	350,000	D790
Impact Strength, Notched Izod	ft-lb/in	15	16	14.5	16	D256
Hardness, Rockwell/Barcol		M62	M62	M51	R118	D785
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F	3.9 x 10 ⁻⁵	3.9 x 10 ⁻⁵	3.9 x 10 ⁻⁵	3.8 x 10 ⁻⁵	D696
Thermal Conductivity	Btu in/hr/ft ² °F				1.350	
Deflection Temperature						
at 66 psi	°F				260	D648
at 264 psi	°F	275	277	255		
ELECTRICAL PROPERTY						
Dielectric Strength, Short Time	V/mil	> 400	> 400	425	399	D149
Dielectric Constant					3.000	D150
at 60 Hz						
at 10 ² Hz		2.970	2.970		2.950	
at 10 ⁶ Hz		2.950	2.970		1.0 x 10 ⁻¹⁶	
Volume Resistivity	Ω/cm					
Arc Resistance	sec			115		D150
Dissipation Factor						
at 60 Hz					.001	
at 10 ² Hz		.0006	.0006		.007	
at 10 ⁶ Hz		.009	.009			
OPTICAL PROPERTIES						
Haze	%			.900	1.100	
Luminescence Transmission	%			88	89	
Index of Refraction					.159	
UL INFORMATION ^c						
Minimum Material Thickness	in	.058 .120 .240	.058 .120 .240	.058 .120 .240	.062 .125	
Flammability Rating UL94		V-2 V-2 V-0	V-2 V-2 V-0	V-2 V-2 V-2	V-2 V-2	
Hot Wire Ignition		24 55 82	24 50 139	32 54 102	30 64	
High Amp Arc Ignition		18 17 42	200+ 200+ 200+	34 85 63	200+ 81	
High Volt Track Rate		0 2.7 0	1.08 0 0	0.0	3.0	

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^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYCARBONATE (PC) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Lexan 101	Medium Gray 7002	Transparent	255-0082-00		2.360	CR
Lexan 141R	Smoke Gray		255-0930-00		2.360	DL
Lexan 141R	Light to Medium Gray 70044		255-0264-00		2.360	CR
Lexan 141R	Tek Blue 2095		255-0267-00		2.360	CR
Lexan 141R	Natural 112		255-0270-00		2.360	CR
Lexan 141R	New Generation Gray 70075		255-0286-00		2.360	CR
Lexan 141R	Charcoal Gray 70078	Color matched to 255-0302-00	255-0292-00		2.360	CR
Lexan 141R	Silver Gray 70092		255-0298-00 ^b		2.360	CR
Lexan 141R	Yellow 401		255-0364-00		2.360	CR
Lexan 141R	Gray 70363		255-0652-00		2.360	CR
Lexan 143R	White 803		255-0156-00		2.430	CR
Lexan 143R	Red TP 612	Optical grade, UV Stable	255-0651-00		2.410	CR
Lexan 143R	White 8244		255-0327-00		2.410	CR
Lexan FL-900/Makrolon SF600	Tan 4095	Structural Foam Grade, 5% Glass Fiber, Reinforced, Fire Retardant	255-0757-00		2.130	DL
Lexan FL910	Natural	Structural Foam Grade, 10% Glass Fiber Reinforced, Fire Retardant	255-0783-00		2.130	DL
Properties	Unit of Measure	Lexan 101, 141R, 143R	Lexan FL-900/Makrolon SF600	Lexan FL910		ASTM Test Method
PHYSICAL PROPERTY						
Specific Gravity	g/cc	1.200	.900			D792
Mold Shrinkage	in/in	.006	.005 - .007			D955
Water Absorption, 24 Hours	%	.150	.120	.120		D570
MECHANICAL PROPERTY						
Tensile Strength, Yield	psi	9,000	6,100	6,300		D638
Elongation	%	110	4.6	3		D638
Flexural Strength	psi	13,500	11,630	12,540		D790
Flexural Modulus	psi	340,000	350,000			D790
Impact Strength, Notched Izod	ft-lb/in	16 (.125)				D785
Hardness, Rockwell		M70				
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F	3.75×10^{-5}	2.0×10^{-5}	1.8×10^{-5}		
Deflection Temperature	°F					D648
at 66 psi		280				
at 264 psi		270				
ELECTRICAL PROPERTY						
Dielectric Strength, Short Time	V/mil	380 (.125)	204	245		D149
Dielectric Constant						D150
at 10^2 Hz		3.170	2.220	2.410		
at 10^6 Hz		2.960	2.180	2.330		
Dissipation Factor						D150
at 10^2 Hz		.0009	.0012	.0029		
at 10^6 Hz		.010	.0061	.0081		
UL INFORMATION ^c						
Minimum Material Thickness	in	.045 .058 .120 .240	.125 .240	.240		
Flammability Rating UL94		V-2 V-2 V-2 V-0	V-0 V-0	V-0		
Hot Wire Ignition		20 39 40 40	46	46		
High Amp Arc Ignition		32 200+ 81 81	28	28		
High Volt Track Rate		1.5 2.6 2.6 2.6	7.4	7.4		

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^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYCARBONATE (PC) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Lexan 940	New Generation Gray 70075	Fire Retardant	255-0317-01		2.530	CS
Lexan 940	Silver Gray 7227	Fire Retardant	255-0540-01 ^b		2.530	DL
Lexan 940	Tek Blue 2095	Fire Retardant	255-0527-01 ^b		2.530	CR
Lexan 940	TV Gray 70387	Fire Retardant	255-0565-01 ^b		2.530	CR
Lexan 940	Smoke Tan 50747	Fire Retardant	255-0565-02		2.530	DL
Lexan 940	Earth Brown 50781	Fire Retardant	255-0565-03		2.530	DL
Lexan 940	Slate Gray MVCL15884	Fire Retardant	255-0565-04 ^b		2.530	CR
Lexan 940	Ivory Gray 70464	Fire Retardant	255-0565-05		2.530	DL
Lexan 940	Dove Gray 16025	Fire Retardant	255-0565-06		2.530	CR
Lexan 920	Black 701	Fire Retardant	255-0574-01 ^b		2.430	CR
Lexan 920	Brown 50639	Fire Retardant	255-0735-00		2.430	CR
Lexan 920	Red 6214	Fire Retardant	255-0736-00		2.430	CR
Lexan 920	Orange 620939	Fire Retardant	255-0737-00		2.430	DL
Lexan 920	Yellow 4217	Fire Retardant	255-0738-00		2.430	CR
Lexan 920	Green 30146	Fire Retardant	255-0739-00		2.430	DL
Lexan 920	Blue 20142	Fire Retardant	255-0740-00		2.430	CR
Lexan 920	Purple 20127	Fire Retardant	255-0741-00		2.430	CR
Lexan 920	Gray 7058	Fire Retardant	255-0742-00		2.430	DL
Lexan 920	White 82355	Fire Retardant	255-0743-00		2.430	DL
Lexan ML4024R	Tek Blue 2095	Fire Retardant	255-0814-00 ^b		2.430	DL
Lexan FL-1000	Gray 733	Structural Foam Grade, Fire Retardant	255-0913-00		1.930	DL
Properties	Unit of Measure	Lexan 940/920	Lexan ML4024R	Lexan FL-1000	ASTM Test Method	
PHYSICAL PROPERTY						
Specific Gravity	g/cc	1.210	1.210	.900	D792	
Mold Shrinkage	in/in	.005 - .007		.004 - .006	D955	
Water Absorption, 24 Hours	%	.150	.150		D570	
MECHANICAL PROPERTY						
Tensile Strength, Yield	psi	9,000	9,000	5,200	D638	
Tensile Strength, Break	psi			5,200		
Elongation	%	110	4.6		D638	
Break				4		
Flexural Strength, Yield	psi	13,200	13,200	10,000	D790	
Flexural Modulus	psi	325,000		321,000	D790	
Shear Strength	psi	6,000				
Impact Strength, Notched Izod	ft-lb/in	11 -12 (.125)	10 (.125)		D256	
Hardness, Rockwell		M70, R118			D785	
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F	3.75 x 10 ⁻⁵	3.75 x 10 ⁻⁵		D696	
Thermal Conductivity	Btu in/hr/ft ² /°F	1.350				
Vicat Soft Point	°F	305			D1525	
Deflection Temperature	°F				D648	
at 66 psi		280	280	280		
at 264 psi		270	270	260		
ELECTRICAL PROPERTY						
Dielectric Strength, Short Time	V/mil	425 (.125)	380		D149	
Dielectric Constant					D150	
at 10 ² Hz		3.010	3.010			
at 10 ⁶ Hz		2.960	2.960			
Dissipation Factor						
at 10 ² Hz		.0009	.0009		D150	
at 10 ⁶ Hz		.010	.010			
UL INFORMATION ^c						
Minimum Material Thickness	in	.058 .120	.093	.125		
Flammability Rating UL94		V-0 V-0	V-3	V-0/V-5		
Hot Wire Ignition		23 37		46		
High Amp Arc Ignition		17 20		28		
High Volt Track Rate		5.8 6.2		7.4		

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^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYESTER (AROMATIC)

(LCP - LIQUID CRYSTAL POLYMER)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Vectra A-230	Black	Carbon Fiber Reinforced	255-1040-00		17.600	DL
Properties	Unit of Measure	Vectra A-230			ASTM Test Method	
PHYSICAL PROPERTY						
Specific Gravity	gm/cc		1.500			D792
Melting Point	°F		535			
Moisture Absorption at Equilibrium	%		.030			D570
MECHANICAL PROPERTY						
Tensile Strength	psi		28,000			D638
Tensile Elongation	%		1,100			D638
Tensile Modulus	psi		4,500,000			D638
Flexural Strength	psi		37,000			D790
Flexural Modulus	psi		3,500,000			D790
Impact Strength, Notched Izod	ft-lb/in		1.200			D256
THERMAL PROPERTY						
Deflection Temperature at 264 psi	°F		430			D648
UL INFORMATION			NOT UL RECOGNIZED			

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POLYETHERIMIDE (PEI)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Ultem 1010 Ultem 1000F	Natural Medium Gray 7123	High Flow grade FDA grade	255-0874-00 255-1028-00		4.650 4.650	DL DL
Properties		Unit of Measure	Ultem 1010		Ultem 1000F	
PHYSICAL PROPERTY						
Specific Gravity		gm/cc	1.270		1.270	
Mold Shrinkage		in/in/°F	.007		.007	
Recommended Processing Temperature		°F	640 - 800		640 - 800	
Water Absorption		%				
24 Hours			.250		.250	
Long Term			1.250		1.250	
MECHANICAL PROPERTY						
Tensile Strength, Yield		psi	15,200		15,200	
Elongation		%				
Yield			7,500		7,500	
Break			60,000		60,000	
Tensile Modulus		psi	430,000		430,000	
Flexural Strength		psi	21,000		21,000	
Flexural Modulus		psi	480,000		480,000	
Compressive Strength		psi	20,300		20,300	
Compressive Modulus		psi	420,000		420,000	
Impact Strength, Notched Izod		ft-lb/in				
.125 Inch			.600		1.000	
Hardness, Rockwell			M109		M109	
THERMAL PROPERTY						
Linear Thermal Expansion		in/in °F	3.0 x 10 ⁻⁵		3.0 x 10 ⁻⁵	
Thermal Conductivity		Btu in/hr/ft ² /°F	1.500		1.500	
Deflection Temperature		°F				
at 68 psi			405		410	
at 264 psi			387		392	
Maximum Recommended Service Temperature, Continuous		°F	338		338	
ELECTRICAL PROPERTY						
Volume Resistivity		Ω/cm	6.7 x 10 ¹⁷		6.7 x 10 ¹⁷	
Arc Resistance		sec			128	
Dielectric Strength, Short Time		V mil	710		710	
Dielectric Constant, 60 Hz			3.15		3.15	
Dissipation Factor						
at 60 Hz			.0013		.0013	
at 1 MHz			.0025			
UL INFORMATION ^b						
Minimum Material Thickness		in	.063	.125	.063	.125
Flammability Rating UL94			V-0	V-0	V-0	V-0
Hot Wire Ignition			58	82	58	82
High Amp Arc Ignition			3	15	3	15
High Volt Track Rate			2.4	2.2	2.4	2.2

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^b See Page 1-2 for definitions of UL terms used in Section 1.

POLYETHYLENE (PE)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Ethylene-Hexene-1 Copolymer ^b Marlex 4903 Marlex 6050	Natural Natural Natural	High Density Extrusion Grade, High Density Injection Molding/Extrusion Grade, High Density	255-0646-00 255-0215-00 255-0110-00		.624 .655 .650	CR CR CR
Properties	Unit of Measure	Marlex 4903	Marlex 6050	ASTM Test Method		
PHYSICAL PROPERTY Density Mold Shrinkage Melt Index	in/in	.950 .020-.050 .300	.960 .020-.050 6.000	D792 D955-51 D1238-57T		
MECHANICAL PROPERTY Tensile Strength, Yield Elongation Tensile Modulus Stress at 1% Offset Stress at Rupture Strain at Yield Strain at Rupture Compressive Stress at 1% Offset Flexural Stress at 1% Offset Stiffness in Flexure Flexural Modulus Impact Strength, Notched Izod Hardness, Rockwell	psi % psi psi psi % % psi psi psi psi ft-lb/in	3,600 500 110,000 3,600 2,100 10 20-70 3,200 800 115,000 165,000 .700-4.000 D65 (Shore)	4,400 500 150,000 4,300 2,400-4,400 10 12-30 3,600 1,000 160,000 165,000 1-14 D68	D412-51T D695-54 D638-56T D412-51T D412-51T D412-51T D695-54 D790-49T D747-50 D790-49T D256-56		
THERMAL PROPERTY Linear Thermal Expansion Thermal Conductivity Specific Heat Deflection Temperature at 264 psi Vicat Soft Temperature Deformation Under Load Brittle Temperature Flammability	in/in/°C °F Cal/gm/°C °F °F % °F in/min	1.3 x 10 ⁻⁴ 160 250 8.100 -140 to < -180 1.040	1.3 x 10 ⁻⁴ 170 260 8.100 -100 to < -180 1.040	D696-44 C177-45 C351 D648 D1525-58T D621-51 D756-55T D635-56T		
ELECTRIC PROPERTY Dielectric Strength Dielectric Constant at 1 kHz at 1 MHz Dissipation Factor at 1 kHz at 1 MHz	V/mil	510 2.350 2.350 .0002 .0003	510 2.350 2.350 .0002 .0003	D149-55T D150-54T D150-54T		
UL INFORMATION		NOT UL RECOGNIZED	NOT UL RECOGNIZED			

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^b Properties information not available.

POLYETHYLENE (PE) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Tenite 808E Tenite 808E Tenite 811A	Natural Black 60457 Natural	Low Density, Extrusion Grade Injection Molding, Extrusion Grade Injection Molding, Low Density	255-0508-00 254-0966-00 254-0939-00		.630 .630 .630	CR CR CR
Properties		Unit of Measure	Tenite 808E	Tenite 811A		ASTM Test Method
PHYSICAL PROPERTY Specific Gravity Water Absorption, 24 Hours		g/cc %	.919 .010	.916 .010		D792 D570
MECHANICAL PROPERTY Tensile Strength Elongation Impact Strength, Notched Izod Hardness, Rockwell		psi % ft-lb/in	1,300 500 No Break J73	1,200 350 No Break J71		D638 D638 D256
THERMAL PROPERTY Linear Thermal Expansion Deflection Temperature at 66 psi Vicat Soft Point		in/in °F °F	11. x 10 ⁻⁵ 110 189	11. x 10 ⁻⁵ 100 183		D696 D648 D1525
ELECTRICAL PROPERTY Dielectric Strength, Short Time Dielectric Constant at 10 ³ Hz at 10 ⁶ Hz Dissipation Factor at 10 ³ Hz at 10 ⁶ Hz		V/mil	1,000 2,300 2,300 .0005 .0005	1,000 2,300 2,300 .0005 .0005		D149 D150 D150
UL INFORMATION			NOT UL RECOGNIZED	NOT UL RECOGNIZED		
Chemical Resistance: Not affected by concentrated hydrochloric, sulphuric, or hydrofluoric acids or sodium hydroxide. No known organic solvents will dissolve polyethylene, however, some softening or embrittlement may occur. It is advised to test polyethylene carefully before use.						

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Avecor X-13330	Red, PE BMN 5565	Injection Molding, Extrusion Grade, Low Density, Color Concentrate, 25:1 Letdown	255-0188-00		1.520	
Properties	Unit of Measure	Avecor X-13330	ASTM Test Method			
PHYSICAL PROPERTY Specific Gravity Melt Index	g/cc g/10 Min	.923 30	D1505 D1238			
MECHANICAL PROPERTY Tensile Strength, Yield Tensile Strength, Break Elongation Stiffness in Flexure	psi psi % psi	1,800 1,500 100 24,000	D638 D638 D747			
THERMAL PROPERTY Vicat Soft Point Brittle Temperature	°C °F	90 - 4	D1525 D746			
UL INFORMATION		NOT UL RECOGNIZED				

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POLYETHYLENE (PE) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Bakelite DFD-4960 Bakelite DFD-6005 Bakelite DGDA-3363 Bakelite DHDA-7702	Natural Natural Natural Black	Foam, Extrusion Grade Injection Molding, Extrusion Grade Extrusion Grade Semiconducting (20 Ω /cm) Extrusion Grade	255-0018-00 255-0071-00 255-0505-00 255-0374-00		.775 .815 .720 .878	CR CR CR CR
Properties	Unit of Measure	Bakelite DFD-4960	Bakelite DFD-6005	Bakelite DGDA-3363	Bakelite DHDA-7702	ASTM Test Method
PHYSICAL PROPERTY Specific Gravity Melt Index	g/cc g/10 Min	.440	.920 .300	.950 .250	1.120	D1505 D1238
MECHANICAL PROPERTY Tensile Strength, Break Elongation Stiffness in Flexure 25°C 0°C -25°C -50°C Shear Strength Environmental Stress Cracking Hardness, Shore	psi % psi psi F ₅₀ Hours	600 300 2,500 > 300 D45	2,200 600 23,000 43,000 120,000 245,000	3,000 600 100,000 200,000 300,000 400,000	1,400 230 350 -49	D638 D638 WC-72-B-1/1 D732-78 D732 D1693
THERMAL PROPERTY Extrusion Compound Temperature at Die Brittle Temperature, 50% Non-failure Deformation at 100°C	°F °F	300	400 -90 20	500 -95 0		D746 D1706
ELECTRICAL PROPERTY Dielectric Strength, Short Time Dielectric Constant, 1 MHz Dissipation Factor, 1 MHz	V/ml @.125	220 1,500 .0002	550 2,280 .0002	550 2,340 .0002		D149 D150 D150
UL INFORMATION		NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED	

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Ultrathene UE630	Silver Gray YR21505	Vinyl Acetate 18%	255-0304-00		2.380	CR
Properties	Unit of Measure	Ultrathene UE630		ASTM Test Method		
PHYSICAL PROPERTY Specific Gravity Melt Index	g/cc g/10 Min	.940 1.300		D1238		
MECHANICAL PROPERTY Tensile Strength, Break Elongation Torsional Stiffness Environmental Stress Crack Resistance Modulus of Elasticity 2% Secant 1% Secant (calculated from the 2% values) Hardness, Shore	psi % psi hr/°F psi	2,100 730 7,000 > 3,000 7,200 8,300 A92		D638 D638		
THERMAL PROPERTY Vicat Soft Point Brittle Temperature	°F °F	156 -105		D1525 D746		
UL INFORMATION		NOT UL RECOGNIZED				

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POLYPHENYLENE SULFIDE (PPS)

Description					Part Number	Codes ^a			
Material	Color					ND	Cost/Lb in Truckload Quantities	ST	
Ryton R-4 Ryton A-100 Ryton BR06-C ^c Thermocomp OF-1008 Thermocomp OFL-4042 Thermocomp PDX-83165	Natural (Dark Brown) Natural (Dark Brown) Natural (Dark Brown) Dark Blue 5490 Natural (Dark Brown) Natural	40% Glass Fiber Reinforced 40% Glass Fiber Reinforced High Flow 40% Glass Fiber Refinforced 10% Glass Fiber Reinforced, 20% Teflon Filled EMI Attenuator, Conductive, 40% Ni-C Fiber			255-0538-00 ^b 255-0538-01 255-1055-00 255-0695-00 255-0624-00 255-1041-00		3.290 4.720 5.200 3.450 6.100	CR DL DL DL DL DL	
Properties	Unit of Measure	Ryton R-4/ A-100		Thermocomp OF-1008		Thermocomp OFL-4042	Thermocomp PDX-83165	ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Mold Shrinkage Water Absorption, 24 Hours	g/cc in/in %	1.640 < .050		1.650 .020		1.540 .040	1.650 .0015 .030	D1505-68 D955 D570-63	
MECHANICAL PROPERTY Tensile Strength Elongation Flexural Strength Flexural Modulus Compressive Strength Impact Strength, Izod Notched, .125 in Specimen Unnotched, .125 in Specimen Hardness, Rockwell	psi % psi psi psi ft-lb/in ft-lb/in	19,500 (Break) 1,300 29,000 1,700,000 21,000 1,500 8 R123		23,000 (Yield) 3-4 32,000 1,800,000 1,500		12,500 3-4 17,000 800,000 .600 5-6	21,000 2,000 26,000 2,100,000 .800 5	D638-72 D638-72 D790-71 D790-71 D695-69 D256	
THERMAL PROPERTY Linear Thermal Expansion Thermal Conductivity Specific Heat, 24 hrs. at 25°C Deflection Temperature at 66 psi at 264 psi	in/in °F Btu in/hr/ft ² /°F °F	2.2 x 10 ⁻⁵ 3.100 > 500		1.5 x 10 ⁻⁵ 3.100 505		2.2 x 10 ⁻⁵ 2.200 470	.8 x 10 ⁻⁵ 510 500	D696 C177 C351 D648-72	
ELECTRICAL PROPERTY Volume Resistivity, 2 min. Dielectric Strength Dielectric Constant, at 10 ³ Hz at 10 ⁶ Hz Dissipation Factor, at 10 ³ Hz at 10 ⁶ Hz	Ω/cm V/mil	4.5 x 10 ¹⁶ 450 3.9 3.8 .001 .0013						D257 D149 D150 D150	
UL INFORMATION ^d Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition High Volt Track Rate	in	.058 V-0 300+ 200+ 0	.120 V-0 300+ 200+ 7.1	.240 V-0 300+ 200+ 0	.018 V-0 59 12 9.1	.069 V-0 59 8 6.5	.128 V-0 98 7 .8	.250 V-0 163 7 NOT UL RECOGNIZED	V-0

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^b Safety controlled.

^c Property information not available.

^d See Page 1-2 for definitions of UL terms used in Section 1.

POLYPROPYLENE (PP)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Tenite 4230A/AMOCO 1046	Natural		254-0985-00		.500	CR
Tenite 4230A	Red P-42004		255-0041-00		.500	CR
Tenite 4230A	White P-12015		255-0045-00 ^b		.500	CR
Tenite 4230A	Dark Gray 3975		255-0223-00		.500	CR
Tenite 4230A	Light Gray P-23013		255-0245-00		.500	CR
Tenite 4230A	Yellow XP-62004		255-0272-00		.500	CR
Tenite 4230A	Brown P-33011		255-0273-00		.500	CR
Tenite 4230A	Green P-77004		255-0274-00		.500	OB
Tenite 4230A	Black 95662		254-0990-00		.500	CR
Empee PP401-CS	Black 3330-3	Injection Grade, Fire Retardant	255-0461-01		.500	DL
Properties	Unit of Measure	Tenite 4230A	AMOCO 1046	Empee PP401-CS		ASTM Test Method
PHYSICAL PROPERTY						
Specific Gravity	g/cc	.903-.907	.900	.940		D792
Mold Shrinkage	in/in	.011-.013	.015-.020	.012-.018		D955
Melting Point	°F	333				
Melt Flow			5.	5.-7.		
Recommended Processing Temperature	°F			400		
Water Absorption, 24 Hours	%	.010-.030	< .010	.010		D570
MECHANICAL PROPERTY						
Tensile Strength	psi	5,000	5,400 (Yield) 19,000 (Break)	4,400		D638
Elongation	%	10.900-12.900	50.000 (Break)	190		D638
Tensile Modulus	psi	200,000	220,000			D638
Flexural Modulus	psi	230,000		215,000		D638
Impact Strength, Notched Izod	ft-lb/in	.950	.500 (.250)	4,000		D256
Hardness, Rockwell		R100	Shore D76	R100		
THERMAL PROPERTY						
Maximum Service Temperature	°F		250			
Continuous Service Temperature	°F		220			
Linear Thermal Expansion	in/in/°F	5.0 x 10 ⁻⁵				D864
Deflection Temperature	°F		230			D648
at 66 psi	°F	> 197	252			
at 264 psi	°F	> 128	176			
ELECTRICAL PROPERTY						
Volume Resistivity	Ω/cm		> 1.0 x 10 ¹⁶	1.5 x 10 ¹⁶		
Arc Resistance	sec		63	161		
Dielectric Strength, Short Time	V/mil	650	550	900		D149
Dielectric Constant						D150
at 10 ³ Hz		2.300	2.400	2.460		
at 10 ⁶ Hz		2.300	2.400	2.450		
Dissipation Factor						
at 10 ³ Hz		.0005	< .00011	.007		D150
at 10 ⁶ Hz		.0005	< .0005	.006		
UL INFORMATION ^c						
Minimum Material Thickness	in	.050	.058	.058	.120	.240
Flammability Rating UL94		HB	HB	V-2	V-2	V-2
Hot Wire Ignition				14	23	56
High Amp Arc Ignition				200+	200+	200+
High Volt Track Rate				0	.1	.1

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYPROPYLENE (PP) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Tenite 4242A Tenite 4250A Tenite 4250A Tenite 4250A	Med. Gray Translucent 90522 Natural Blue 96638 Silver Gray P-96102	Extrusion Grade Injection Grade, Recommended for Hinges Injection Grade, Recommended for Hinges Injection Grade, Recommended for Hinges	255-0064-00 255-0502-00 255-0674-00 255-0335-00 ^b		.500 .500 .500 .500	CR CR DL DL
Properties		Unit of Measure	Tenite 4242A	Tenite 4250A	ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Melt Flow		g/cc g/10 min.	.902 9	.902 18	D1505 D1238L D638 D747 D758 D1525 D648	
MECHANICAL PROPERTY Tensile Strength, Yield Stiffness in Flexure Impact Strength, Izod Notched at 23°C (73°F) Unnotched at 23°C (73°F) Unnotched at -18°C (0°F) Hardness, Rockwell		psi psi ft-lb/in ft-lb/in ft-lb/in	5,000 160,000 .600 > 16 4 R94	4,800 145,000 .500 > 16 4 R92		
THERMAL PROPERTY Vicat Soft Point Deflection Temperature at 264 psi		°F °F	291 135	289 135		
UL INFORMATION ^c Minimum Material Thickness Flammability Rating UL94		in	.050 HB	.050 HB		

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYSTYRENE (PS)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Styafil G-30/30 Styron 6075 Thermocomp CF-1008M Thermocomp CF-1008M	White 240 Natural Black 8-013 Smoke Tan BN-7-963	30% Glass Fiber Reinforced Flame Retardant, Surface Lubricated 40% Glass Fiber Reinforced 40% Glass Fiber Reinforced	254-0965-00 255-0791-00 255-0239-00 255-0903-00		.630 1.080 1.080	CR CR CR DL
Properties	Unit of Measure	Styafil G-30/30	Styron 6075	Thermocomp CF-1008M	ASTM Test Method	
PHYSICAL PROPERTY						
Specific Gravity	g/cc	1.280	1.160	1.380	D792	
Mold Shrinkage	in/in	.002	.005	.001 (.250 thick)	D955	
Water Absorption, 24 Hours	%	.070		.050	D570	
MECHANICAL PROPERTY						
Tensile Strength, Yield	psi		3,200		D638	
Tensile Strength, Break	psi	14,000	3,500	15,000	D638	
Elongation	%	1,100	45	2-3	D638	
Tensile Modulus	psi	1,210,000	290,000	1,650,000	D638	
Flexural Strength	psi	20,000	6,500	17,500	D790	
Flexural Modulus	psi			1,500,000	D790	
Impact Strength, Notched Izod	ft-lb/in	2.500	2.200	1.200	D256	
Hardness, Rockwell		E53	L55	M93	D785	
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F	2.19×10^{-5}	4.4×10^{-5}	1.6×10^{-5}	D969	
Deflection Temperature at 66 psi	°F	231		235	D648	
Deflection Temperature at 264 psi		220		220		
ELECTRICAL PROPERTY						
Dielectric Strength, Short Time	V/mil	396	550		D149	
Dielectric Constant					D150	
at 10^3 Hz		3.040	2.540			
at 10^6 Hz		2.960	2.540			
Dissipation Factor					D150	
at 10^3 Hz		.001				
at 10^6 Hz		.003				
UL INFORMATION ^b						
Minimum Material Thickness	in		.040 .080 .120	.062		
Flammability Rating UL94		NOT UL RECOGNIZED	V-0 V-0 V-0	HB		
Hot Wire Ignition			11 26 42			
High Amp Arc Ignition			200+ 200+ 200+			
High Volt Track Rate			4.3			

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^b See Page 1-2 for definitions of UL terms used in Section 1.

POLYSTYRENE (PS) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
AMOCO R5C2	Clear		255-0001-00		.580	CR
Properties	Unit of Measure	AMOCO R5C2			ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Melt Flow Mold Shrinkage Water Absorption, 24 Hours	g/cc dg/min (Method G) in/in %	1.050 2.500 .001-.006 .050			D1238 D955 D570	
MECHANICAL PROPERTY Tensile Strength, Yield @ .200 in/min Tensile Strength, Break @ .200 in/min Tensile Modulus Flexural Modulus 2 in. span Impact Strength, Notched Izod @ 73°F Hardness, Rockwell	psi psi psi psi ft-lb/in	7,500 7,500 500,000 520,000 .500 M95			D638 D638 D790 D256 D785	
THERMAL PROPERTY Linear Thermal Expansion Thermal Conductivity Specific Heat (at 73°F) Vicat Soft Point Deflection Temperature at 264 psi	in/in °F cal-cm/cm ² -°C-sec x 10 ⁻⁴ cal/°C/gm °F °F	6-8 x 10 ⁻⁵ 2.400-3.300 .320-.350 221 206			D696 D648	
ELECTRICAL PROPERTY Volume Resistivity Dielectric Strength Dielectric Constant at 10 ⁶ Hz Dissipation Factor at 10 ⁶ Hz Arc Resistance	Ω/cm V/mil sec	1.0 x 10 ¹⁶ 500-700 2.400-3.100 .0001-.005 60-80			D257 D149 D150	
MOLDABILITY PARAMETERS Flow Length at 400°F, 600 psig Flow Length at 425°F, 900 psig Flow Length at 425°F, 900 psig Flow Length at 500°F, 1000 psig	in in in in	16 20 28 24				
UL INFORMATION ^b Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition High Volt Track Rate	in	.058 .096 .120 HB HB HB 23 30 6 16 1.3 1.3				

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^b See Page 1-2 for definitions of UL terms used in Section 1.

POLYSULFONE

Description		Remarks	Part Number		Codes ^a			
Material	Color				ND	Cost/Lb in Truckload Quantities	ST	
Udel P-1700 Udel P-1700NT	Black 935 Natural		255-0330-00 ^b 255-0719-00			3.820 3.820	CR CR	
Properties		Unit of Measure	Udel P-1700		ASTM Test Udel P-1700NT		Method	
PHYSICAL PROPERTY							D792 D955 D570	
Specific Gravity		g/cc	1.240		1.240			
Mold Shrinkage		in/in	.007		.007			
Water Absorption, 24 Hours		%	.300		.300			
MECHANICAL PROPERTY							D638 D638 D638 D790 D790 D256	
Tensile Strength, Yield		psi	10,200		10,200			
Elongation		%	5-6		5-6			
Tensile Modulus		psi	360,000		360,000			
Flexural Strength		psi	15,400		15,400			
Flexural Modulus		psi	390,000		390,000			
Impact Strength, Notched Izod		ft-lb/in	1.300		1.200			
Hardness, Rockwell			M69		M69, R120			
THERMAL PROPERTY							D696 D648	
Linear Thermal Expansion		in/in °F	3.1 x 10 ⁻⁵		3.1 x 10 ⁻⁵			
Thermal Conductivity		Btu in/hr/ft²°F	1.800		1.800			
Deflection Temperature								
at 66 psi		°F	358		358		D149 D150 D150	
at 264 psi		°F	345		345			
ELECTRICAL PROPERTY								
Volume Resistivity		Ω/cm	5.0 x 10 ¹⁶		5.0 x 10 ¹⁶			
Dielectric Strength, Short Time		V/mil	425		425		D149 D150 D150	
Dielectric Constant								
at 10 ³ Hz			3.100		3.070			
at 10 ⁶ Hz			3.030		3.030			
Dissipation Factor								
at 10 ³ Hz			.001		.0008			
at 10 ⁶ Hz			.0034		.0034			
UL INFORMATION ^c								
Minimum Material Thickness		in	.058	.120	.240	.058	.120	.240
Flammability Rating UL94			V-2	V-2	V-0	V-2	V-2	V-0
Hot Wire Ignition			21	63	91	21	63	91
High Amp Arc Ignition			6	14	16	6	14	16
High Volt Track Rate			6	0	1.2	6	0	1.2

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYURETHANE (PUR)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Estane 58810	Black 288	Elastomer-Ether Base	255-0337-00		2.750	CR
Estane 58810	Natural	Elastomer-Ether Base	255-0370-00		2.750	CR
Estane 58810	Yellow	Elastomer-Ether Base	255-0370-01		2.750	CR
Estane 58810	Dark Gray	Elastomer-Ether Base	255-0370-02		2.750	CR
Estane 58880	Natural	Elastomer-Ether Base	255-0655-00		3.150	DL
Estane 58890	Natural	Elastomer-Ether Base Flame Retardant	255-0621-01 ^b		3.150	CR
Properties	Unit of Measure	Estane 58810	Estane 58880	Estane 58890	ASTM Test Method	
PHYSICAL PROPERTY					D518 D518 D518	
Specific Gravity	g/cc	1.140	1.100	1.280		
Specific Volume	lb/in ³	24.300				
Mold Shrinkage	in/in	.010 - .015			D638 D412 (2 in/min) D412 (2 in/min) D624 D1938 D412 (2 in/min) D412 (2 in/min)	
MECHANICAL PROPERTY						
Tensile Strength	psi	7,700	4,150			
Elongation at Break	%	540	600	420		
Elongation, Set	%	65	100	90		
Tear - Die C - pli		750				
Tear - Trouser - pli		470				
Set after 100% Extension	%	10				
Tensile Modulus						
	10% psi	365				
	25% psi	670	440			
	50% psi	900	530			
	75% psi	1,070				
	100% psi	1,200	700	1,300		
	200% psi	1,850				
	300% psi	3,000	1,150	2,400		
Hardness, Shore		A92	A79	A90	D676 D395	
Compression Set, Method B	%					
22 hrs. at RT		20				
158°F		42			D746	
212°F		60				
Tabor Abrasion gms Loss, HM-22 Wheel	1000 gm Load 5000 Rev	.024				
THERMAL PROPERTY					D395 D518	
Bell Brittle Point	°F	< 80	< -94	< -80		
Ozone Resistant (Procedures A, B, C)	1000 hrs, 50 pphm, 100°F	No Effect			D257 D149 D495 D150 D150	
ELECTRICAL PROPERTY						
Volume Resistivity	Ω/cm					
at RT		11. x 10 ¹²				
at 50°C		.700 x 10 ¹²				
500 VDC - 1 min at 70°C		.200 x 10 ¹²				
Dielectric Strength	V/mil	470				
Arc Resistance	Second	122				
Dielectric Constant						
at 60 Hz		6.000				
at 10 ³ Hz		5.590				
at 10 ⁶ Hz		4.210				
Dissipation Factor						
at 60 Hz		.048				
at 10 ³ Hz		.043				
at 10 ⁶ Hz		.075				
UL INFORMATION ^c					.075 V-2	
Minimum Material Thickness	in	NOT UL RECOGNIZED	NOT UL RECOGNIZED			
Flammability Rating UL94						

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYURETHANE (PUR) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Estane 58013 Estane 58133	Black 288 Black	Elastomer, Extrusion Grade Elastomer, Injection Grade	255-0123-00 255-0262-00		2.100 2.100	CR CR
Properties	Unit of Measure	Estane 58013	Estane 58133	ASTM Test Method		
PHYSICAL PROPERTY				D12-27 D1053 D1149-55T D570 D412 D638 D624 D1229 D394 D1044-49T D676 D696 D746		
Specific Gravity	g/cc	1.210	1.220			
Mold Shrinkage	in/in		.008			
Freeze Point,						
Gehman Low-Temperature	°C	-31				
Processing Stock Temperature	°F	340-360	350-370			
Ozone Aging, 50 ppm,						
20% Stretch, 120°F, for						
144 hours		No Cracks				
Water Absorption, 24 Hours	%					
MECHANICAL PROPERTY				D676 D696 D746		
Tensile Strength, Yield	psi	5,000	5,500			
Tensile Elongation	%					
Modulus at 300% Elongation	psi	1,400	4,000			
Elongation	%	500	450			
Graves Tear	lb/in	400	550			
Compression Set, ASTM Method R						
22 hours at 25°C	%	39	22			
22 hours at 70°C	%	87	50			
NBS Abrasion, Method 14111,						
Federal Test Method		180				
Taber Abrasion (mg Loss)				D676 D696 D746		
(CS17 Wheel, 100 gms Weight,		4	2.500			
5000 Cycles)						
Hardness, Durometer		A88, C60	D55			
THERMAL PROPERTY						
Linear Thermal Expansion	in/in °F					
Brittle Temperature	°F	-100	-80			
Deflection Temperature						
at 66 psi	°F					
at 264 psi	°F					
ELECTRICAL PROPERTY				D676 D696 D746		
Dielectric Strength	V/mil	740	D149			
Insulation Resistance at 15.6°	Ω	4.520				
UL INFORMATION						
		NOT UL RECOGNIZED	NOT UL RECOGNIZED			

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POLYURETHANE (PUR) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Adiprene L-100 ^b REN RP6405 ^b REN 6401	Natural Natural Blue	Elastomer, Fluid, Extrusion Grade Casting Grade, Foam, Rigid Elastomer, Low Viscosity	006-1193-00 255-0920-00 255-0768-00		2.410	CR DL DL
Properties		Unit of Measure	REN 6401			ASTM Test Method
PHYSICAL PROPERTY Specific Gravity		g/cc	1.070			D395
MECHANICAL PROPERTY Tensile Strength Elongation Compression Set Hardness, Shore		psi % %	2000. 420. 5. A60-65			

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^b Properties information not available.

POLYVINYL CHLORIDE (PVC) (VINYL)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Geon 8812	Natural	Elastomer, Injection Grade	255-0566-00		.036	CR
Geon 8812	Black 288	Elastomer, Injection Grade	255-0181-00		1.030	CR
Geon 8813	Black 288	Elastomer, Injection Grade	255-0212-00		1.020	CR
Geon 8813	Natural 021	Elastomer, Injection Grade	255-0355-00		1.000	CR
Geon 8814	Black 288	Elastomer, Injection Grade	255-0208-00		.755	CR
Geon 8814	White E132	Elastomer, Injection Grade	255-0284-00		2.550	CR
Geon 8814	Natural	Elastomer, Injection Grade	255-0435-00		.790	CR
Properties	Unit of Measure	Geon 8812	Geon 8813	Geon 8814	ASTM Test Method	
PHYSICAL PROPERTY					D590	
Specific Gravity	g/cc	1.240	1.270	1.320		
Water Absorption, 24 Hours	%	.280	.230	.230	D638 D638 D638 D1004 D676 D573 D573	
MECHANICAL PROPERTY						
Tensile Strength, Break	psi	1,500	1,900	2,400		
Elongation	%	400	380	310		
Tensile Modulus	psi	500	800	1,300		
Clash Berg Stiffness						
Modulus of Rigidity at -35°C T _f	psi	4,700	21,000	46,000		
	°C	-40	-40	-35		
Graves Tear		180	250	400		
Hardness, Shore		A65	A75	A85		
Tensile	psi	1,600	2,100	2,500	D746	
100% Modulus	psi	620	1,050	1,850		
Volume Change	%	-8.5	-8.5	-8.5	D149	
THERMAL PROPERTY						
Brittle Temperature	°F	-49	-37	-10	D149	
Air Oven Aging, 7 Days at 100°C						
ELECTRICAL PROPERTY					D149	
Dielectric Strength	V/mil	690	750	850		
UL INFORMATION		NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED		

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Geon 8800	Natural	Extrusion Grade, Elastomer	255-0017-00		1.291	CR
Geon 8843	Natural 021	Extrusion Grade, Elastomer	255-0130-00		1.320	CR
Geon 8870	Natural	Extrusion Grade, Elastomer	255-0255-00		1.914	CR
Teknor-Apex 862	Natural	Extrusion Grade, Elastomer	255-0460-00		1.050	CR
Properties	Unit of Measure	Geon 8800	Geon 8843	Geon 8870	Teknor-Apex 862	ASTM Test Method
PHYSICAL PROPERTY						D792
Spennfic Gravity	g/cc	1.350	1.340	1.270	1.330	
Stock Extrusion Temperature	°F		380-390	350-360	390-400	D638 D638 D638
MECHANICAL PROPERTY						
Tensile Strength, Break	psi	3,000	2,400	2,000	3,500	
Elongation	%	250	275	300	290	
Tensile Modulus at 100%, Elongation	psi		1,400	900	2,600	D746 UL83
Hardness, Shore		C79	A91	A78	D63	
THERMAL PROPERTY						D746 UL83
Brittle Temperature	°F	14	-15	-45		
Low Temperature, Flexibility	°F		-15			D746 UL83
ELECTRICAL PROPERTY						
Volume Resistivity	Ω/cm	1.8 x 10 ¹²	1.0 x 10 ¹¹	1.5 x 10 ⁹	1.0 x 10 ¹⁴	D746 UL83
Dielectric Strength	V/mil	700	600	700	800	
Maximum Continuous Operation			105	105	80	D746 UL83
UL INFORMATION		NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED	

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POLYVINYL CHLORIDE (PVC) (VINYL)(cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Geon 8714	Black 288	Elastomer, Extrusion Grade	255-0299-00		.968	CR
Properties		Unit of Measure	Geon 8714	ASTM Test Method		
PHYSICAL PROPERTY Specific Gravity		g/cc	1.350	D792 D638 D638 D790 D256 D648		
MECHANICAL PROPERTY Tensile Strength, Break Tensile Modulus Flexural Strength Impact Strength, Notched Izod Shear Strength Hardness, Rockwell		psi psi psi ft-lb/in	6,100 340,000 11,500 15 Low R109			
THERMAL PROPERTY Deflection Temperature at 264 psi		°F	161			
ELECTRICAL PROPERTY Volume Resistivity		Ω/cm	2.0 x 10 ¹²			
UL INFORMATION			NOT UL RECOGNIZED			

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Geon 82024 or Manner V95	Black 288 Black 580	Elastomer, Injection Grade	255-0403-00		2.630	CR
Properties		Unit of Measure	Geon 82024 or Manner V95	ASTM Test Method		
PHYSICAL PROPERTY Specific Gravity Water Absorption, 24 Hours		g/cc %	1.190 .500	D792 D570 D412 D412 D412 D1043 D1004 D676 D746 D149		
MECHANICAL PROPERTY Tensile Strength, Break Elongation Tensile Modulus Clash Berg Stiffness Modulus of Rigidity at -35°C Graves Tear Hardness, Shore		psi % psi psi lb/in	950 450 400 1,400 120 A50			
THERMAL PROPERTY Brittle Temperature		°F	-50			
ELECTRICAL PROPERTY Dielectric Strength		V/mil	620			
UL INFORMATION			NOT UL RECOGNIZED			

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POLYVINYL CHLORIDE (PVC) (VINYL)(cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Manner V-80 Manner V-80 Teknor-Apex 838 Teknor-Apex 838 Teknor-Apex CV-80	Medium Gray 530 Light to Medium Gray 565 Natural Slate Gray Black	Injection Grade Injection Grade Extrusion Compound Injection Grade, Conductive	255-0114-00 255-0372-00 255-0720-00 255-0813-00 255-0785-00		2.185 .840 .840	DL CR CR CR DL
Properties	Unit of Measure	Manner V-80	Teknor-Apex 838	Teknor-Apex CV-80	ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity	g/cc	1.320		1.380	D792 D638 D638 D638 D1706 & D2240 D257	
MECHANICAL PROPERTY Tensile Strength, Break Elongation Tensile Modulus Hardness, Shore	psi % psi	1,300 330 1,200 A86	2,100 95 A75	1,580 150 C66		
ELECTRICAL PROPERTY Volume Resistivity	Ω/cm		1.0 x 10 ¹³			
UL INFORMATION		NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED		

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RUBBER (INJECTION MOLDING GRADE)

Description					Codes ^a		
Material	Color				ND	Cost/Lb in Truckload Quantities	ST
Hypalon ^b Santoprene 101-55 TPR-1700 TPR-0932 TPR-5290	Black Black Black Natural Natural	Thermoplastic Elastomer, Injection Grade Thermoplastic Elastomer, Injection Grade Thermoplastic Elastomer, Extrusion Grade Thermoplastic Elastomer, Extrusion Grade			255-0544-00 255-0523-00 255-0616-00 255-0715-00 255-0784-00	5.640 1.660 1.660 2.000 1.700	CR CR CR CR CR
Properties	Unit of Measure	Santoprene 101-55	TPR-1700	TPR-0932	TPR-5290	ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity	g/cc	.880	.880	1.200	.880	D412 & D638 D412 D638 D412 D395B D2240	
Tensile Strength, Break	psi	750	950	1,200	1,000		
Tensile Set at Break	%	20	20				
Elongation	%	250	200	400	450		
Tensile Modulus	psi	500	800	900			
Flexural Modulus	psi		2,700				
Compression Set, 22 hrs, at RT	%	35	30				
Hardness, Shore		A55	A77	A94	A85		
UL INFORMATION ^c Flammability Rating UL94		NOT UL RECOGNIZED	NOT UL RECOGNIZED	V-2	NOT UL RECOGNIZED		

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^b Properties information not available.

^c See Page 1-2 for definitions of UL terms used in Section 1.

RUBBER (INJECTION MOLDING GRADE) (cont)

Description								Part Number			Codes ^a				
Material	Color										ND	Cost/Lb in Truckload Quantities		ST	
Santoprene 101-64	Black	Thermoplastic Elastomer Thermoplastic Elastomer, Injection Grade Thermoplastic Elastomer Thermoplastic Elastomer						255-1010-00			1.520		DL		
Santoprene 201-64	Natural							255-0515-00			1.550		DL		
Santoprene 201-73	Natural							255-0936-00			1.450		DL		
Santoprene 101-73	Black							255-0945-00			1.420		DL		
Properties		Unit of Measure	Santoprene 101-64			Santoprene 201-64			Santoprene 201-73			Santoprene 101-73			ASTM Test Method
PHYSICAL PROPERTY															D297
Specific Gravity		gm/cc	.970			.970			.980			.980			
Mold Shrinkage		in/in	.017 - .020			.017 - .020			.015 - .017			.015 - .017			
Recommended Processing Temperature		°F	365 - 420			365 - 420			335 - 420			335 - 420			
MECHANICAL PROPERTY															D412 D638
Tensile Strength, Yield		psi	1,000			1,000			1,200			1,200			
Elongation Yield		%	400			400			375			375			
Tensile Modulus		psi	10 M			10 M			20 M			20.0			
Flexural Modulus		psi	30 M			30 M			40 M			40,000			
Modulus at 100% Elongation			340			340			470			470			
Modulus at 300% Elongation			740			740			890			890			
Compression Set		%													
22 hrs at 73°F			22			22			25			25			
22 hrs at 158°F			27			27			29			29			
Hardness, Shore			A64			A64			A73			A73			
THERMAL PROPERTY															D412
Max Recommended Service Temperature		°F													
Intermittent			300			300			300			300			
Continuous			275			275			275			275			
ELECTRICAL PROPERTY															
Dielectric Strength, Short Time		V/mil	605			605			605			605			
Dielectric Constant at 60 Hz			2.900			2.900			3.000			3.000			
Dielectric Constant at 1 MHz			3.000			3.000			3.200			3.200			
Dissipation Factor at 60 Hz			.0085			.0085			.0088			.0088			
Dissipation Factor at 1 MHz			.0078			.0078			.0079			.0079			
UL INFORMATION ^b															
Minimum Material Thickness		in	.040			.040			.040			.040			
Flammability Rating UL94			HB			HB			HB			HB			
Hot Wire Ignition			36			33			45			14			
High Amp Arc Ignition			200 +			200 +			200 +			179			
High Volt Track Rate			0			0			1.0			.6			

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^b See Page 1-2 for definitions of UL terms used in Section 1.

RUBBER (INJECTION MOLDING GRADE) (cont)

Description						Part Number		Codes ^a			
Material	Color							Remarks	ND	Cost/Lb in Truckload Quantities	ST
Santoprene 203-50	Natural	Thermoplastic Elastomer				255-1039-00		1.410	DL		
Santoprene 251-80	Natural	Thermoplastic Elastomer, Flame Retardant				255-1009-00		1.850	DL		
Santoprene 253-50	Natural	Thermoplastic Elastomer, Flame Retardant				255-1036-00		1.650	DL		
Properties		Unit of Measure	Santoprene 203-50		Santoprene 251-80		Santoprene 253-50		ASTM Test Method		
PHYSICAL PROPERTY									D297		
Specific Gravity	gm/cc	.940		1.240		1.110					
Mold Shrinkage	in/in	.015 - .017		.015 - .020		.015 - .020					
Recommended Processing Temperature	°F	370 - 440		370 - 430		370 - 420					
MECHANICAL PROPERTY									D412		
Tensile Strength, Yield	psi	1,730		1,100		3,700					
Tensile Strength, Break	psi	4,000		1,100		3,700					
Elongation Yield	%	50						660	D412		
Elongation Break	%	600		410							
Tensile Modulus	psi	340,000									
Flexural Modulus	psi	500,000						30	D412		
Modulus at 100% Elongation		1,450									
Compression Set	%										
22 hrs at 73°F		41		22		30		D50	D412		
22 hrs at 158°F		55									
Hardness, Shore		D50		A80		D50					
THERMAL PROPERTY											
Max Recommended Service Temperature	°F	300									
Intermittent		275									
Continuous											
ELECTRICAL PROPERTY											
Dielectric Strength, Short Time	V/mil	605		605		605					
Dielectric Constant at 60 Hz		2.700		3.000		2.900					
Dielectric Constant at 1 MHz		2.900		3.300		3.300					
Dissipation Factor at 60 Hz		.0027				.0021					
Dissipation Factor at 1 MHz		.0042				.0041					
UL INFORMATION ^b											
Minimum Material Thickness	in	.040	.062	.125	.062	.090	.125	.250	.031	.062	.125
Flammability Rating UL94		HB	HB	HB		V-0	V-0	V-0	HB	HB	HB
Hot Wire Ignition		18	18	26		32	41	86	11	20	34
High Amp Arc Ignition		200 +	200 +	200 +	200 +	200 +	200 +	200 +	86	200 +	200 +
High Volt Track Rate		.1	.3	.3			3.6				2.3

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^b See Page 1-2 for definitions of UL terms used in Section 1.

SILICONE (SI)

Description		Remarks	Part Number	Codes ^a			
Material	Color			ND	Cost/Lb in Truckload Quantities	ST	
C-Flex 42-3500 Dow Corning 2366 GE SE-436U Modified GE SE-4404U GE SE-4404U S-2351U S4702-0-Z ^b	Natural Blue Black Natural Green Natural Black	Rubber, Elastomer, Fire Retardant Rubber, Elastomer Rubber, Elastomer Rubber, Elastomer Rubber, Elastomer Rubber, Elastomer	255-0925-00 252-0700-00 255-0520-00 255-0472-00 255-0472-01 255-0614-00 254-1000-00		13.380 12.400 .982 8.740	DL DL CR CR CR DL CR	
Properties	Unit of Measure	C-Flex 42-3500	Dow Corning 2366	GE SE-436U Modified	GE SE-4404U	S-2351U	ASTM Test Method
PHYSICAL PROPERTY Specific Gravity	g/cc	.900	1.160		1.250	1.240	D2000
MECHANICAL PROPERTY Tensile Strength Elongation Tear Strength - Die B Tear Strength - Die C Compression Set Hardness, Shore	psi % ppi ppi psi	1,650 850 130 72 A40-50	1,250 550 190 A50	1,000 600-700 200 15 A50	1,100 420 60 10 A52	1,300 600 190 8	D412 D412 D624 D746
THERMAL PROPERTY Brittle Temperature	°F	-100		-80	-85	-98	
ELECTRICAL PROPERTY Resistivity	Ω/cm	1.2 x 10 ¹⁶		1 x 10 ¹⁶			
UL INFORMATION ^c Minimum Material Thickness Flammability Rating UL94	in	NOT UL RECOGNIZED	.0075 V-0	NOT UL RECOGNIZED	NOT UL RECOGNIZED	NOT UL RECOGNIZED	

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^b Properties Information not available.

^c See Page 1-2 for definitions of UL terms used in Section 1.

SILICONE (SI) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Dow Corning #96-079 ^b Dow Corning #96-082 ^b		Resin Resin	252-0214-00 252-0213-00		5.680	CR DL
Properties		Unit of Measure		Dow Corning #96-082		
UL INFORMATION ^c Minimum Material Thickness Flammability Rating UL94		in		.120 V-0		

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Q3-6567	Gray-Black	Silicone Elastomer, Casting Grade, Flame Retardant	252-0277-00			DL
Properties		Unit of Measure	Q3-6567			ASTM Test Method
PHYSICAL PROPERTY Specific Gravity Water Absorption, 7 Days at 25°C		g/cc %	1.200 1			D412 D412
MECHANICAL PROPERTY Tensile Strength Elongation		psi %	150 Min 65 Min			
THERMAL PROPERTY Volume of Thermal Expansion		cm/cm/°C (0 - 100°C)	8.49 x 10 ⁻⁴			
ELECTRICAL PROPERTY Volume Resistivity Dielectric Strength Dielectric Constant @ 100 Hz @ 100 kHz Dissipation Factor @ 100 Hz @ 100 kHz		Ω/cm V/mil	5 x 10 ¹⁴ 450 (.125) 3 2.98 .008 .002			D257 D149 D150 D150
UL INFORMATION			NOT UL RECOGNIZED			

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^b Properties information not available.

^c See Page 1-2 for definitions of UL terms used in Section 1.

ABS POLYCARBONATE ALLOY (ABS-PC) (cont)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Bayblend 6500 Bayblend 6500 Cycloy EHA Bayblend KU1-1439	Black 4051 Slate Gray Gray 3522 Smoke Tan	Fire Retardant ABS-PC Alloy Fire Retardant ABS-PC Alloy Plating Grade ABS-PC Alloy Fire Retardant ABS-PC Alloy	255-0574-00 ^b 255-0821-00 255-1027-00 255-1058-00	N	1.710 1.710 1.490	CR DL DL DL
Properties	Unit of Measure	Bayblend 6500	Cycloy EHA	Bayblend KU1-1439	ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Mold Shrinkage	g/cc in/in	1.190 .005 - .007	1.090 .006 - .008	1.160 .005 - .007	D792-66 Method A D955 D638-68 D638-68 D638-68 D638-68 D790-66 D790-66 D256-56 D785-65	
MECHANICAL PROPERTY Tensile Strength, Yield Break Elongation, Yield Break Tensile Modulus Flexural Strength Flexural Modulus Impact Strength, Notched Izod Hardness, Rockwell	psi % psi psi psi ft-lb/in	8,000 8,000 370,000 13,700 380,000 10,500 R117	6,000 6,000 350,000 11,400 370,000 6,900 R111	7,000 6,500 3,500 70,000 377,000 12,600 377,000 5,600 R115		
THERMAL PROPERTY Linear Thermal Expansion Deflection Temperature Annealed at 66 psi Annealed at 264 psi Deflection Temperature Unannealed at 66 psi Unannealed at 264 psi	in/in °F mil Deflection °F at 10 mil Deflection °F at 10	3.7 x 10 ⁻⁵ 240 225 238 220	3.4 x 10 ⁻⁵ 247 232 	 194 180 194		
ELECTRICAL PROPERTY Dielectric Strength, Short Time	V/mil			2,000		
UL INFORMATION ^c Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition High Volt Track Rate	in	.058 .120 .240 V-0 V-0 V-0 25 53 200+ 200+ 200+ 22 9 12	NOT UL RECOGNIZED	NOT UL RECOGNIZED		

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^b Safety controlled.

^c See Page 1-2 for definitions of UL terms used in Section 1.

POLYPHENYLENE ETHER - STYRENE ALLOY (PPE)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost/Lb in Truckload Quantities	ST
Prevex BJA Prevex VQA Prevex B1A Prevex B1A	Natural 1010 Black Natural 1010 Smoke Tan 86769	Styrene Modified, Solid Injection Styrene Modified, Fire Retardant Styrene Modified, Solid Injection Styrene Modified, Solid Injection	255-0910-00 255-0924-00 255-1035-00 255-0958-00		1.610 2.340 1.800 1.880	DL DL DL DL
Properties	Unit of Measure	Prevex BJA	Prevex VQA	Prevex B1A	ASTM Test Method	
PHYSICAL PROPERTY Specific Gravity Mold Shrinkage	g/cc in/in	.006 - .008	1.060 .006 - .008	.960 .003 - .005	D792 D955	
MECHANICAL PROPERTY Tensile Strength, Yield Tensile Strength, Break Tensile Modulus Flexural Strength Flexural Modulus Impact Strength, Notched Izod Hardness, Rockwell	psi psi psi psi psi ft-lb/in	4,490 300,000 9,540 350,000 1.900	9,000 360,000 14,000 380,000 5,000 R120	6,000 380,000 8,100 460,000	D638 D638 D638 D790 D790 D256 D785	
THERMAL PROPERTY Linear Thermal Expansion Deflection Temperature at 264 psi Vicat Soft Point	in/in °F °F °F	190	265 300	3.8 x 10 ⁻⁵ 190	D648 D648 D1525	
UL INFORMATION ^b Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition High Volt Track Rate	in	.125 .150 .175 .250 V-0 V-0 V-0 V-0 114 119 120 + 25 14 9 55	.062 .025 .150 V-1 V-1 V-1 104 120 200 + 200 + 18 18	.150 V-0 120 + 13 7.2		

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^b See Page 1-2 for definitions of UL terms used in Section 1.

POLYPHENYLENE OXIDE - STYRENE ALLOY (PPO)

Description		Remarks		Part Number	Codes ^a		
Material	Color				ND	Cost/Lb in Truckload Quantities	ST
GE 534-801 GE 72799 Noryl FN-215	Natural 801 Silver Gray 7042 Smoke Tan	Styrene Modified, Fire Retardant Styrene Modified, Structural Foam Grade	255-0203-00 255-0328-00 255-0756-01		6.290 4.740 1.690	CR CR DL	
Noryl FN-215	Black	Styrene Modified, Structural Foam Grade	255-0756-04		1.640	DL	
Noryl N-190 Noryl N-190	Black 701 Slate Gray 7887	Styrene Modified, Fire Retardant Styrene Modified, Fire Retardant	255-0615-00 255-0823-00		1.740 1.790	CR CR	
Properties	Unit of Measure	GE 72799	GE 534-801	Noryl FN-215	Noryl N-190		ASTM Test Method
PHYSICAL PROPERTY Specific Gravity Mold Shrinkage Water Absorption, 24 Hours	g/cc in/in %	1.060 .007-.009 .030	1.000 0.006	.850 .060 .060	1.080 .005-.007 .070		D792 D955 D570
MECHANICAL PROPERTY Tensile Strength, Break Elongation Tensile Modulus Flexural Strength Flexural Modulus Impact Strength, Notched Izod Hardness, Rockwell	psi % psi psi psi ft-lb/in	11,600 20 - 40 390,000 16,000 375,000 1.200 M78, R119	7,800 380,000 12,800 400,000 1.7 R115	3,400 16 235,000 6,800 260,000 18	7,000 - 9,600 50 - 60 355,000 - 380,000 7,800 325,000 7 R115, R119		D638 D638 D638 D790 D790 D256 D785
THERMAL PROPERTY Linear Thermal Expansion Deflection Temperature at 66 psi at 264 psi	in/in °F °F °F	2.9 x 10 ⁻⁵ 355 345	3.7 x 10 ⁻⁵ 345 355	3.8 x 10 ⁻⁵ 205 180	9.68 x 10 ⁻⁵ 210 190		D696 D648
ELECTRICAL PROPERTY Dielectric Constant at 100 Hz at 10 ⁶ Hz Dissipation Factor at 100 Hz at 10 ⁶ Hz		2.580 2.580 .00035 .0009		2.270 2.180 .0047 .0039	2.780 2.730 .0004 .0009		D150 D150
UL INFORMATION ^b Minimum Material Thickness Flammability Rating UL94 Hot Wire Ignition High Amp Arc Ignition High Volt Track Rate	in	NOT UL RECOGNIZED	.060	.240 V-0 111 43 8.6	.058 V-0 41 58 14	.120 V-0 41 58 14	.240 V-0 61 200+ 11.7
Chemical Resistance Resistant to detergents and acids. Softens or dissolves in halogenated and aromatic hydrocarbons. Subject to stress failure induced by petroleum derivatives and FREON ^R TF when applied under load.							

^a The nominal price (at time of printing) is listed in the cost column. Prices are for Truckload quantities; for further information, contact Bert Hippe, 627-2378. For ND Codes (New Design Recommendations) and Status Codes, see tab marked CODES in the back of this catalog.

^b See Page 1-2 for definitions of UL terms used in Section 1.

PLASTIC MOLDING MATERIAL

EPOXY (EP)

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost	ST
Hysol MC-18 Hysol MG-20F 3M #251 or Equivalent	Clear Black	IC Use Loss Stress	255-0536-00 255-0830-00 252-0212-00		.041 Gram .009 Gram 6.030 Pound	CR CR CR

EPOXY RESINS

Description		Remarks	Part Number	Codes ^a		
Material	Color			ND	Cost	ST
Eccosort CR-117 Stycast 2850 FT Stycast 2850 FT-FR 3M #281 or Equivalent 3M #281	Blue Blue	High Thermal Conductivity (High Sink Use) w/Catalyst #11 90-pound Container 1 Gallon Container	255-0586-00 255-0686-00 255-0731-00 252-0210-00 252-0210-01		4.660 Pound	DL DL DL DL CR

CURING AGENT

Description	Part Number	Codes ^a		
Material		ND	Cost	ST
Bis-amine A (aromatic Diamine)	255-0762-00			DL

^a The nominal price (at time of printing) is listed in the cost column. For ND Codes (New Design Recommendations) and Status Codes, see tab marked CODES in the back of this catalog.

PIGMENTS, COLOR CONCENTRATES AND OTHER ADDITIVES ACETAL

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Reed C-PA-373 Reed C-PA-375 Reed C-PA-377	Gold Blue Red	25:1 25:1 25:1	255-0563-00 255-0564-00 255-0562-00	Gram Pound Pound		.021 8.010 6.900	CR CR CR

FLUOROCARBON

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Du pont Halar #17 or 3 Halar #17-R-RD-4 Tefzel	Gray 9200 Orange Red Red 810	 100:1 100:1 100:1	255-0394-00 255-0818-00 255-0820-00 255-0511-00	Pound Pound Pound Ounce		17.250 26.710 35.400	CR PP PP

NYLON

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
C-NY-969	Silver Gray	25:1	255-0462-00	Pound			DL

POLYCARBONATE

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
DL-4040 (Silicone 20% Concentrate) Lexan FLC-95 (Structural Foam Concentrate) Reed C-PY-168	Natural Natural Jet Black	10:1 20:1 25:1	255-0692-00 255-0765-00 ^b 255-0613-00	Gram Pound Gram		.016	DL DL CR

POLYALLOMER/POLYETHYLENE/POLYPROPYLENE

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Reed C-PPR-7623 Teknor-Apex EPE 426 Teknor-Apex EPE 435 Teknor-Apex EPE 428 Teknor-Apex EPE 434	Slate Gray Black Brown Red Orange	25:1 20:1 20:1 20:1 20:1	255-0862-00 252-0194-00 252-0194-01 252-0194-02 252-0194-03	Gram Gram Gram Gram Gram		.005 .003 .004 .004 .004	CR CR CR CR CR
Teknor-Apex EPE 427 Teknor-Apex EPE 433 Teknor-Apex EPE 432 Teknor-Apex EPE 431 Teknor-Apex EPE 429	Yellow Green Blue Violet Gray	20:1 20:1 20:1 20:1 20:1	252-0194-04 252-0194-05 252-0194-06 252-0194-07 252-0194-08	Gram Gram Gram Gram Gram		.005 .004 .003 .005 .003	CR CR CR CR CR
Teknor-Apex EPE 430 Tenite 1917A Tenite M7853146E	White Red Red	20:1 20:1 10:100	252-0194-09 255-0188-00 255-0956-00	Gram Gram Gram		.003 .009 .030	CR CR CR

POLYPHENYLENE ETHER/POLYPHENYLENE OXIDE

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Noryl FNC-20 (Structural Foam Concentrate) Nortech MF 1276H (Structural Foam Concentrate)	Natural Natural	20:1	255-0764-00 ^c 255-0921-01	Pound Pound			DL DL

^a The nominal price (at time of printing) is listed in the cost column. For ND Codes (New Design Recommendations) and Status Codes, see tab marked CODES in the back of this catalog.

^b Use with Lexan FL-900 and FL-910 (See Page 1-21).

^c Use with Noryl FN-215 (See Page 1-47).

PIGMENTS, COLOR CONCENTRATES AND OTHER ADDITIVES (cont)

POLYURETHANE

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Teknor X14667 Reed C-PUR-209 Wilson 16-BK-8	New Generation Gray Charcoal Gray Black	25:1 50:1 50:1	255-0448-00 255-0452-00 255-0829-00	Gram Pound Pound		3.430	DL CR DL

VINYL

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Avecor ACC 2434 Avecor ACC 3516V Avecor ACC 4475 Teknor-Apex CS-1508-3 Teknor-Apex CS-1509-3	Royal Blue Brick Red Gold Green White	25:1 25:1 25:1 50:1 50:1	255-0561-00 255-0559-00 255-0560-00 252-0192-00 252-0193-00	Pound Pound Gram Pound Gram		3.670 8.160 .012 2.660 .003	CR CR CR CR CR
Teknor-Apex CS-993-3 Teknor-Apex 3000 Teknor-Apex 5110 Teknor-Apex 2354-3 Teknor-Apex 6020	Red Yellow Brown Tek Blue Red	50:1 50:1 50:1 50:1 50:1	254-0937-00 255-0430-00 255-0434-00 255-0436-00 255-0476-00	Pound Gram Gram Gram Gram		2.750 .003 .003 .003 .007	CR CR CR DL CR
Teknor-Apex 3200 Teknor-Apex 1020 Teknor-Apex CS-7338-3 Teknor-Apex CS-5200-3 Teknor-Apex 4010	Orange Gray Slate Gray Dark Gray Blue	50:1 50:1 20:1 50:1 50:1	255-0513-00 255-0517-00 255-0815-00 255-0027-00 255-0578-00	Gram Gram Pound Gram Gram		.004 .003 3.830 .004 .003	CR CR CR CR CR
Teknor-Apex CS-383-3F Teknor-Apex CS-6159-3	Violet Yellow	50:1 50:1	255-0608-00 255-0725-00	Gram Pound		.006 2.750	CR CR

PIGMENT

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Ferro FC-7379 PMS 2131 LFD PMS 4700 LFD	Silver Gray Yellow Black	100:1 100:1 100:1	252-0196-00 255-0774-00 255-0570-00 ^b	Gram Pound Pound		.007 5.040 2.400	CR CR CR

EMI ATTENUATING ADDITIVE

Material	Color	Letdown Ratio	Part Number	Unit of Measure	Codes ^a		
					ND	Cost	ST
Cycrom Dry Blend 500	Natural (Dark Gray)	As Needed	252-0744-00	Pound			DL

^a The nominal price (at time of printing) is listed in the cost column. For ND Codes (New Design Recommendations) and Status Codes, see tab marked CODES in the back of this catalog.

^b Can be used in all Thermoplastics.

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PLASTIC SHAPES

ROD

ACETAL

Material	Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Delrin 500	Natural	.250 OD	255-0159-00	Foot	.232	CR
Delrin 500	Black	.250 OD	255-0139-00	Foot	.330	OT
Delrin 500	Black	.250 OD x 10 Long	255-1097-00	Inch	.017	CR
Delrin 500	Natural	.375 OD	255-0062-00	Foot		DL
Delrin 500	Black	.500 OD	255-0449-00	Foot	.690	CR
Delrin 500	Natural (White)	.500 Thick x 1.000 Wide	255-0734-00			DL
Delrin 500	Black	.750 OD	255-0163-00	Foot		DL
Delrin 500	Black	.750 OD	255-0307-00	Inch	.129	CR
Delrin A/F	Natural (Brown)	1.000 OD	255-0421-00			OB
Delrin 500	Natural	1.000 OD	255-0463-00			OB
Delrin 500	Black	1.000 OD	255-0528-00	Foot	2.630	CR
	Black	.250 Thick x 2.500 Wide	255-0763-00	Foot		DL
	Natural	.500 Thick x .500 Wide x 24 Long	255-0770-00			OB

FLUOROCARBON (TFE)

Material	Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Teflon	Natural	.125 OD	255-0164-00	Inch	.028	CR
Teflon	Natural	.187 OD	255-0127-00	Inch	.035	CR
Teflon	Natural	.312 OD	254-0978-00	Foot	1.300	CR
Teflon	Black	.375 OD	255-0028-00	Foot	1.110	CR
Teflon	Natural	.562 OD	255-0145-00	Foot	2.250	CR

PHENOLIC

Material	Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Cotton-Phenolic	Natural	.250 OD	254-0530-00	Foot	2.930	CR
Cotton-Phenolic	Natural	.375 OD	254-0504-00	Inch		OB
Cotton-Phenolic	Natural	.438 OD	254-0505-00	Foot	1.630	CR
Paper-Phenolic	Black	.500 OD	254-0507-00	Inch	.258	CR

POLYAMIDE (NYLON) (PA)

Material	Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Zytel 101	Natural	.188 OD ± .001	255-0116-00			DL
Zytel 101	Natural	.250 OD	254-0948-00	Inch	.019	CR
Nylatron GS (MoS ₂ Filled)	Black	.250 OD	255-0196-00	Foot	.110	CR
Zytel 101	Natural	.312 OD	254-0949-00	Inch	.020	CR
Zytel 101	Natural	.375 OD	254-0950-00	Inch	.034	CR
Zytel 101	White	.500 OD	254-0972-00	Foot	.640	CR
Nylatron GS (MoS ₂ Filled)	Black	.500 OD	255-0029-00	Foot	.420	CR
Nylatron GS (MoS ₂ Filled)	Black	.562 OD	255-0108-00	Foot	.910	CS
Zytel 101	Natural	.625 OD	254-0951-00	Inch	.058	CR
Nylatron (GS MoS ₂ Filled)	Black	1.062 OD	255-0132-00			OB

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC SHAPES (cont)

ROD (cont)

POLYSTYRENE (PS)

Material	Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Polystyrene	Clear	.188 OD	254-0914-00	Inch	.014	OB
Polystyrene	Natural	.250 OD	254-0915-00			CR
Polystyrene	Clear	.312 OD	254-0917-00			OB
Polystyrene	Clear	.375 OD	254-0916-00			OB
Polystyrene	Clear	.500 OD	254-0927-00			OB
Polystyrene	Clear, Cross Linked	1.500 OD	255-0104-00	Foot		NP
Polystyrene	Clear, Cross Linked	.750 OD	254-0919-00			OB

MISCELLANEOUS

Material	Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Fiberglass	Green	.123	255-0345-00	Inch	.020	CR
Fiberglass		.930	255-0171-00	Inch		OB
Silicone Rubber		.062 x .094	252-0714-00	Each	.152	CR

STRIP

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.010 x 2.000	Fluorocarbon (Teflon)	255-0032-00	Inch	.242	CR
.020 x .750	Fluorocarbon (Teflon)	255-0020-00	Inch	.028	CR
.062 x 1.000	Fluorocarbon (Teflon)	255-0087-00	Inch	.065	CR
.063 x 1.250	Fluorocarbon (Teflon)	255-0048-00			OB
.063 x 1.620	Fluorocarbon (Teflon)	255-0078-00			OB
.063 x 1.750	Fluorocarbon (Teflon)	255-0079-00			OB
.063 x 2.430	Fluorocarbon (Teflon)	255-0124-00	Inch	.107	CS
.156 x .750	Silicone Rubber	252-0698-00			OB
1.500 Wide	Blue Nylon Webbing	252-0611-00	Yard	.198	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC SHAPES (cont)

TUBING

Material	Color	Dimensions (Inch)		Part Number	Unit of Measure	Codes ^a	
		ID	OD			Cost	ST
Neoprene	Clear	.062	.125	255-0868-01	Each	9.705	CS
	Clear	.125	.187	255-0869-01	Each	7.181	CS
	Natural	.062 (4)	.125	255-0906-00	Foot	1.430	CR
	Natural, Transparent	.047	.059	255-0971-00	Foot	1.803	CR
	Clear	.062	.125	255-0914-00	Foot	.080	CR
PVC	Clear	.125	.187	255-0905-00	Foot	.070	CR
PVC	Clear	.125	.250	255-1006-00	Foot	.130	CR
PVC	Clear	.187	.250	255-0904-00	Foot		NP
PVC	Clear	.187	.312	255-1007-00	Foot	.160	CR
PVC	Clear, Exelon 1060	.187	.372	255-0439-00	Foot	.084	CR
Phenolic	Black	.250	.375	254-0519-00			OB
Phenolic	Natural	.250	.500	254-0539-00			OB
Phenolic	Black	.625	.750	254-0527-00			OB
Polyethylene	Natural		.250	255-0758-00	Each		OB
Polyethylene		1.315	1.565	378-0233-00	Each	.490	CR
Polypropylene	Clear	.187	.250	255-0870-01			NP
Silicone Rubber			.062	252-0674-00			DL
Tygon	Black	.156	.281	255-0943-00	Foot		NP
Tygon	Translucent Yellow	.500	.750	255-0955-01	Each	.830	CR
Urethane	Gray	.0625		255-0703-00	Foot	.131	CS
Vinyl	Natural	.320	.395	255-0567-00	Foot	.097	CS

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC SHAPES (cont)

FILM

POLYCARBONATE (PC)

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.0012 x .250	Transparent Green	255-0257-00	Ounce		DL
.0012 x .500	Transparent Green	255-0155-00	Ounce		DL
.0012 x .8125	Polycarbonate Dielectric, Green	255-0970-00	Ounce		DL
.0008 x .500	Transparent Green	255-0254-00	Ounce		DL
.0005 x .250	Transparent Green	255-0268-00	Ounce		DL
.0005 x .625	Transparent Green	255-0133-00	Pound		DL
.0005 x .687	Transparent Green	255-0206-00	Pound		DL
.0005 x 1.000	Silver and Green, Aluminum Metalized	255-0311-00	Pound		DL
.0005 x 1.000	Transparent Green	255-0456-00	Pound		DL
.0004 x 2.000	Transparent Green	255-0202-00			OB
.0004 x .250	Transparent Green	255-0258-00	Ounce		DL
.00032 x .562	Transparent Green	255-0455-00	Pound		DL
.00032 x 1.000	Transparent Green	255-0475-00	Pound		DL
.00032 x 2.000	Transparent Green	255-0204-00			OB
.00024 x .250	Transparent Green	255-0659-00			OB
.00024 x .375	Transparent Green	255-0301-00	Ounce		DL
.00024 x .500	Transparent Green	255-0152-00	Ounce		DL
.00024 x .625	Transparent Green	255-0153-00	Ounce		DL
.00024 x 1.000	Transparent Green	255-0199-00	Pound		DL
.00024 x 1.500	Transparent Green	255-0151-00	Pound		DL
.00024 x 2.000	Transparent Green	255-0205-00			OB
.0002 x .375	Silver and Green, Aluminum Metalized	255-0366-00	Pound		DL
.0002 x .375	Transparent Green	255-0300-00	Ounce		DL
.0002 x .500	Transparent Green	255-0506-00	Ounce		DL
.0002 x .687	Green	255-0147-00	Pound		DL
.0002 x 1.500	Transparent Green	255-0179-00			OB
.00014 x .375	Transparent Green	255-0433-00			DL
.00014 x .750	Silver and Green, Aluminum Metalized	255-0259-00	Ounce		DL
.00012 x .375	Transparent Green	255-0660-00	Ounce		DL
.00012 x .625	Silver and Green, Aluminum Metalized	255-0558-00	Pound		DL
.00012 x 1.062	Silver and Green, Aluminum Metalized	255-0424-00	Pound		DL
.00012 x 2.250	Silver and Green, Aluminum Metalized	255-0425-00	Pound		DL
.00008 x 1.062	Silver and Green, Aluminum Metalized	255-0367-00	Pound		DL
.00008 x 1.500	Silver and Green, Aluminum Metalized	255-0481-00	Pound		DL
.00008 x 2.250	Silver and Green, Aluminum Metalized	255-0280-00			DL

POLYESTER

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.007 x 12.000 x 12.000	Clear	255-1033-00	Sheet	6,350	PP
.005 x 2.406 x 6.984	Type A	162-0592-00	Each	2.390	CR
.0025 x .300	Clear w/Yellow	253-0304-00	Foot		DL
.0025 x .625	Clear w/Red	253-0298-00	Foot		DL
.001 x .250	Clear	255-0555-00			OB
.001 x .500	Clear	255-0031-00			OB
.001 x 1.000	Clear	254-0934-00	Pound		DL
.001 x 1.000 x 17.000		254-0934-01			OB
.0005 x .500	Clear	254-0646-00	Foot	.001	CR
.0005 x .625	Clear	254-0956-00	Foot	.001	CR
.0005 x .875	Clear	255-0075-00	Pound	3.880	CR
.00035 x 2.000	Clear	255-0093-00			OB
.00035 x 2.250	Clear	255-0326-00	Pound		DL
.00025 x 1.000	Clear	254-0976-00			DL
.00025 x 1.500	Clear	255-0073-00	Pound		DL
.00025 x 2.250	Metalized	255-0011-00			OB
.00025 x 2.750	Clear	254-0946-00	Pound		DL
.0002 x .375	Clear	255-0432-00	Pound		DL

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC SHAPES (cont)

FILM (cont)

POLYETHYLENE

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.0015 x 8. (16. Inch Extended)	Center Folded, Industrial Grade	006-0213-00	Pound		DL
.0015 x 12. (24. Inch Extended)	Center Folded, Industrial Grade	006-0212-00			DL
.0015 x 18. (36. Inch Extended)	Center Folded, Industrial Grade	006-0211-00			DL
.0015 x 24. (48. Inch Extended)	Center Folded, Industrial Grade	006-1085-00	Sheet	.188	DL
.004x 40. x 42.		006-1792-00			CR
.004 x 38. x 48.		006-1793-00	Sheet	.226	CR

POLYIMIDE

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.001 x 12. x 18.	Polyimide w/Acrylic Adhesive One Side	255-0966-00	Square Inch	.010	PP
.001 x 19.	Polyimide w/Epoxy Adhesive One Side	255-0961-00	Square Inch	.010	PP
.001 x 24.	Polyimide w/Acrylic Adhesive One Side	255-0916-00	Square Inch	.018	CR
.002 x 19.	Polyimide w/Epoxy Adhesive One Side	255-0965-00	Square Inch	.013	CR
.002 x 24	Polyimide w/Acrylic Adhesive One Side	255-0917-00	Square Inch	.022	CR
.0025 x .150 x 36. Yards	Polyimide	253-0308-00	Foot		DL
.0025 x .437 x 36. Yards	Polyimide	253-0297-00	Foot	.065	CR
.003 x 19.	Polyimide w/Epoxy Adhesive One Side	255-0989-00	Square Inch	.018	CR
.003 x 24.	Polyimide w/Acrylic Adhesive One Side	255-0974-00	Square Inch	.035	CR
.005.	w/Acrylic Adhesive One Side	255-1093-00	Square Inch	.073	CR
.005 x 3.	Polyimide	255-0780-00	Inch	1.240	CS
.005 x 7.000	W/Acrylic Adhesive One Side	255-0275-00 ^b	Pound	97.693	CR
.005 x 7.500	Polyimide	255-0275-01			DL
.005 x 12. x 18.	Polyimide w/Epoxy Adhesive One Side	255-0967-00	Square Inch	.063	PP
.005 x 19.	Polyimide w/Epoxy Adhesive, One Side	255-0990-00	Square Inch	.033	PP
.005 x 24.	Polyimide w/Epoxy Adhesive One Side	255-0952-00	Square Inch	.024	PP
.005 x 24.	Polyimide w/Acrylic Adhesive One Side	255-0939-00	Square Inch	.033	CR

POLYPROPYLENE (PP)

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.00025 x .250	Transparent	255-0491-00	Ounce		OB
.00025 x .500		255-0866-00			DL
.00025 x .6875	Polypropylene, Aluminum Metalized	255-0653-00			DL
.00032 x .375	Transparent	255-0490-00			DL
.0004 x .250	Transparent	255-0492-00	Ounce		DL
.0004 x.375	Transparent	255-0489-00	Pound		DL
.0005 x 1.062	Polypropylene, Aluminum Metalized	255-0587-00			DL
.001 x .250	Transparent	255-0493-00			DL

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Safety controlled.

PLASTIC SHAPES (cont)

FILM (cont)

POLYSTYRENE (PS)

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.001 x .625	Clear	255-0182-00			OB
.001 x .500	Clear	255-0122-00	Ounce		DL
.001 x .250	Clear	255-0419-00	Ounce		DL
.0008 x .500	Clear	255-0388-00	Ounce		DL
.0005 x .625	Clear	255-0121-00	Ounce		DL
.0005 x 1.000	Clear	255-0119-00	Pound		DL
.00033 x .625	Clear	255-0144-00	Pound		DL
.00033 x 1.500	Clear	255-0178-00			OB
.00033 x 2.000	Clear	255-0118-00	Pound		DL
.00025 x .625	Clear	255-0120-00	Pound		DL
.00025 x 1.250	Clear	254-0654-00	Ounce		DL

MISCELLANEOUS

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.100 x 9.500 x 15.000	Satin, Clear, Textured	255-0960-00	Sheet	.590	CR
.060 x 16.5 x 42. Feet	Nylon/Adhesive	255-0919-00			DL
.010 x 12. x 20.	Polycarbonate (Lexan)	255-0986-00	Each	.088	PP
.010 x 24.	Teflon w/Mylar, + .001 Acrylic Adhesive	255-0982-01	Square Inch	.016	PP
.0085 x 12. x 18.	Epoxy Resin w/Glass & Polyester Fibers	255-0944-00	Square Inch	.036	CR
.006 x 1. x 60. Yards	Polyester/Hemp Paper	253-0293-00	Foot		DL
.005 x 40. x 100. Feet	Triacetate	006-1796-00			DL
.005 x 36. Square	Epoxy Resin & Mica Paper	252-0692-00	Square Inch	.005	CS
.005 x 24. x 24.750	Triacetate	006-2841-00			DL
.004 x 24.	Polyester/Asbestos Paper	252-0687-00	Square Foot		DL
.004 x 20. x 26.	Vinyl, Yellow w/Adhesive Back	255-0440-00	Sheet	.503	CR
.002 x 24.	Polyvinyl Fluoride, White	255-0533-01			OB
.002 x 12. x 2500. Feet	Polyvinyl Fluoride, White	255-0533-00			OB
.002 x 12.	Fluorocarbon (Teflon)	255-0167-00			OB
.002 x 9. x 12.	Mylar w/Adhesive Back	255-0319-00	Sheet	.216	CR
.002 x 2.5 x 10.950	Fluorocarbon (Teflon)	255-0632-00	Each	.392	CR
.001 x 24.	Epoxy Adhesive, Flame Retardant	255-0963-00 ^b	Square Inch	.010	CR
.001 x 20. x 26.	Polyester w/Matte Aluminum w/Adhesive Back	253-0030-00	Square Inch	.002	CR
.001 x 12.	Teflon w/Acrylic Adhesive One Side	255-0982-00	Square Inch	.016	CR
.001 x 6. x 9.	Thick Epoxy	255-0516-06	Sheet	.895	CR
.0005 x 12.	Teflon	255-0166-00	Square Inch	.003	CS
.0005 x 5.	Polyester, Metalized	255-0983-00	Gram	.023	EN
.0005 x 1.	Mylar Type"C"	254-0930-00			OB

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b UL recognized.

PLASTIC SHEETS

ACRYLIC

Material	CRT Filter Data		Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^b	
	Phosphor	% Transmission ^a					Cost	ST
Plexiglas GM	P1, P39, Pel	55	Green 2092	.030 x 38 x 50	255-0185-00	Square Inch	.020	CR
255-0185-00	P1, P39, Pel	55	Green 2092	12 x 12	255-0185-01			OB
Plexiglas GM	All	30	Gray 2064	.030 x 22 x 34	255-0143-00	Square Inch	.034	CR
255-0143-00	All	30	Gray 2064	12 x 12	255-0143-01			OB
Plexiglas GM			Amber 2516	.030 x 38 x 50	255-0187-00	Square Inch		DL
Plexiglas GM			Colorless	.030 x 38 x 58	255-0141-00	Square Inch		DL
255-0141-00			Colorless	13 x 12	255-0141-01	Each		OB
Plexiglas GM	P31	75	Blue 2069	.030 x 36 x 48	255-0305-00	Square Inch	.050	CR
	P1, P2, P39	83						
	P11, P7							
Plexiglas GM	P7, P11	78	Blue 2152	.030 x 38 x 50	255-0186-00	Square Inch		DL
Cal. Color Co. 410C			Red	.030 x 18 x 24	255-0618-00	Square Inch		DL
Tec Satin		80	Deep Ruby Red	.030 x 18 x 24	255-0702-00	Square Inch		DL
Plexiglas II UVA			Colorless	.060 x 36 x 60	254-0935-00	Square Inch	.021	CR
Plexiglas GM			Red 2423	.060 x 36 x 60	255-0442-00	Square Inch		DL
Plexiglas II			Green	.060 x 36 x 60	254-0911-00	Square Inch		DL
Plexiglas GM	P1, P39, P31, P7	80	Aviation Green 2124	.030 x 38 x 50	255-0431-00	Square Inch		DL
Polaroid HNCP 37	All	30	Neutral (Non-glare)	.072 x 18 x 24	255-0325-00	Square Inch		DL
Polaroid HNCP 37	All	30	Neutral	.072 x 18 x 24	255-0401-00			OB
Plexiglas II UVA			Colorless	.100 x 36 x 60	254-0944-00	Square Inch		DL
Plexiglas II UVA			White Frosted W-2447	.100 x 36 x 60	255-0126-00	Square Inch	.023	CR
Plexiglas II UVA			White Translucent W-2447	.125 x 36 x 60	255-0503-00	Square Foot	3.560	CR
Plexiglas II UVA			Colorless	.125 x 36 x 60	254-0907-00	Square Inch	.030	CR
Plexiglas GM	P1, P39, P31, P7	80	Aviation Green 2124	.125 x 36 x 60	255-0413-00	Square Inch		DL
Plexiglas II UVA			Colorless	.187 x 36 x 60	254-0908-00			OB
Cal Color Co. 2423			Red 2423 (Non-glare)	.188 x 34 x 46	255-0691-00	Square Inch		DL
Plexiglas II UVA			Colorless	.250 x 36 x 60	255-0125-00	Square Inch		DL
Plexiglas GM			Colorless	.500 x 36 x 48	255-0642-00	Square Inch	.108	CR
Plexiglas GM			Colorless	.500 x 36 x 48	255-1096-00	Square Inch	.033	CR

ACRYLONITRILE-BUTADIENE-STYRENE (ABS)

Description		Dimensions (Inch)	Part Number	Unit of Measure	Codes ^b	
Material	Color				Cost	ST
ABS	Black	.030 x 53 x 88	255-0191-00	Square Inch	.002	CR
ABS	Gray	.040 x 27 x 120	255-0459-00	Square Inch	.003	CR
ABS	Earth Brown, Haircell	.042 x 19.563 x 25.188	107-0024-02	Each	2.268	CR
ABS	Earth Brown, Haircell	.042 x 27 x 120	255-0833-00	Square Inch	.004	CR
ABS, Vinyl		.042 x 15.810 x 25.180	107-0019-01	Each	1.582	CR
ABS	Black	.047 x 32 x 62	255-0291-00 ^c	Square Inch	.005	CS
ABS	Gray Haircell	.047 x 54 x 84	254-0647-00	Square Inch	.003	CS
ABS	Black	.060 x 32 x 62	255-0397-00	Square Inch	.004	CR
ABS	Gray Haircell, Self Extinguish	.060 x 53 x 88	255-0263-00	Square Inch	.009	CR
ABS	Gray Haircell, Black Matte	.080 x 36 x 72	255-0416-00	Square Inch		DL
ABS	Light Gray	.120 x 32 x 62	255-0418-00	Square Inch	.014	CR
ABS	Black	1.250 x 24 x 24	255-1098-00	Square Foot	45.000	PP
ABS	Silver Gray	25.188 x 19.563	107-0024-01	Each	2.242	CR

^a This is the percentage of light transmitted "through" the plastic sheet listed when used with the indicated numbers.

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^c This part number is also available in an optional size of 54 x 94.

PLASTIC SHEETS (cont)

CELLULOSE ACETATE BUTYRATE (CAB)

Material	CRT Filter Data		Color	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^b	
	Phosphor	% Transmission ^a					Cost	ST
CAB Polaroid HNCP 37 Polaroid NACP 24 CAB	All	30	Clear Neutral Amber Clear	.010 x 24 x 36 .030 x 6 x 6 .030 x 17 x 50 .040 x 20 x 50	255-0224-00 255-0058-00 255-0237-00 255-0310-00	Square Inch Each Square Inch	.003 12.150	CS CS DL OB

PHENOLIC

Description		Dimensions (Inch)	Part Number	Unit of Measure	Codes ^b	
Material	Color				Cost	ST
Phenolic	Natural	.031 x 18 x 24	006-2977-00	Sheet	1.070	CR
Phenolic		.062 x 36 x 36	254-0510-00	Square Inch	.112	OB
Phenolic		.062 x 36 x 48	254-0509-00			CR
Phenolic		.062 x 39 x 48	254-0537-00	Square Inch		OB
Phenolic	Natural	.093 x 36 x 36	254-0531-00			DL
Phenolic	Natural	.093 x 39 x 48	254-0536-00	Square Inch	.030	OB
Phenolic		.125 x 36 x 36	254-0512-00			OB
Phenolic		.187 x 36 x 36	254-0534-00	Square Inch	.030	CR
Phenolic		.250 x 36 x 38	254-0547-00	Square Inch	.050	CR
Phenolic	Natural	.312 x 36 x 48	255-0803-00			DL
Phenolic	Black	.375 x 30 x 48	254-0514-00	Square Inch	.108	OB
Phenolic	Natural	.500 x 36 x 36	254-0515-00			CR

POLYCARBONATE (PC)

Description		Remarks	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^b	
Material	Color					Cost	ST
Polycarbonate	Natural	Stiffener w/Adhesive	.002 x .005 x 2.000	255-0200-01	Each	.443	CR
Polycarbonate	Clear	Lexan, Velvet Text 1 Side, Matte Other	.005 x 24 x 48	255-0775-00	Square Inch	.002	CR
Polycarbonate	Clear		.010 x 15.500 x 23.500	255-0772-00			DL
Polycarbonate	Natural	Satin Clear Text, UV Stabilized	.010 x 24 x 500 Feet	255-0679-00	Inch	.047	CR
Polycarbonate		Clear, Optical	.020 x 24 x 48	255-0295-00	Square Inch	.005	CR
Polycarbonate	Natural	Clear, Optical	.030 x 24 x 48	255-0371-00	Square Inch	.005	CR
Polycarbonate	Natural	Clear, Optical, UV Stabilized	.060 x 48 x 96	255-0200-00	Square Inch	.011	CR
Polycarbonate	Natural	Stiffener w/Adhesive	.060 x .400 Sq.	255-0200-02	Each	.436	CR
Polycarbonate	Light Blue	Transparent, Optical Grade	.060 x 48 x 96	255-0645-00	Square Inch	.009	OT
Polycarbonate	Natural	Clear, UL94 V-2	.125 x 48 x 96	255-0643-00 ^c	Square Inch	.016	CR
Polycarbonate		Clear	.187 x 48 x 96	255-0664-00	Square Inch		DL
Polycarbonate			.750 x 12 x 12	255-1099-00	Square Inch	.003	PP
Polycarbonate		Clear	.040 x 24 x 48	255-1101-00			CR

^a This is the percentage of light transmitted "through" the plastic sheet listed when used with the indicated numbers.

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^c Safety controlled.

PLASTIC SHEETS (cont) POLYESTER (PBT/BET)

Description		Remarks	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
Material	Color					Cost	ST
Polyester	Clear	Electrical Grade	.010 x 5	255-0417-01	Roll	51.450	CR
Polyester		Pressure Sensitive, Adhesive One Side	.010 x 10 x 12.500	255-0427-00	Sheet	.920	CR
Polyester		Mylar Cover Sheet	.010 x 21.900 x 28.500	255-0808-00	Sheet	1.750	CS
Polyester		Electrical Grade	.010 x 36 x 48	255-0417-00	Sheet	6.350	CR
Polyester			1.000 x 16 x 135 Feet	255-0573-00	Roll	55.000	CS

POLYURETHANE FOAM (PUR)

Description		Remarks	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
Material	Color					Cost	ST
Polyurethane	Natural	4 Pounds Density	.125 x 4 x 84	255-0670-00	Sheet	.683	CR
Polyurethane		Nickel Plated	.125 x 7 x 8	252-0597-01	Each	1.612	CR
Polyurethane			.125 x 10.5 x 50 Feet	252-0589-00	Inch	.011	CR
Polyurethane		Electro-magnetic, Energy Absorbing	.125 x 24 x 24	252-0636-00	Square Inch	.030	CR
Polyurethane		Self Adhesive	.250 x 18 x 48	252-0566-00	Square Inch	.012	CS
Polyurethane	Gray		.125 x 48 x 72	252-0597-00	Square Inch	.003	CR
Polyurethane		Scottfelt 5-900Z	.250 x 48 x 72	255-0551-00			OB
Polyurethane		2 Pounds Density	.250 x 54 x 76	252-0570-00	Square Inch	.001	CS
Polyurethane		Charcoal Gray #1240	.500 x 5 x 7	252-0568-00	Square Inch		DL
Polyurethane		2 Pounds Density	1.000 x 54 x 72	252-0560-00			OB
Polyurethane	Charcoal		1.250 x 5.120 x 18	006-2832-00	Each		DL
Polyurethane		1.750 Pounds Density	1.500 x 9.250 x 24	255-0514-00			OB
Polyurethane		2 Pounds Density	2.000 x 56 x 72	255-0486-00	Square Inch		DL
Polyurethane		Fire Retardant, 2 Pounds Density	2.500 x 48 x 96	252-0591-00	Square Inch		DL
Polyurethane							

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC SHEETS

MISCELLANEOUS

Description		Remarks	Dimensions (Inch)	Part Number	Unit of Measure	Codes ^a	
Material	Color					Cost	ST
Acetal	Black	Delrin 500	.375 x 2.5 x 24	255-0721-00	Square Inch	.157	CR
Acetal	Natural, White		.500 x 5 x 18	255-0805-00	Sheet	18.500	CS
Acetal	Natural, White		.093 x 12 x 36	255-0807-00	Square Inch	.073	CR
Fluorocarbon (Teflon)	Natural		.030 x 24 x 24	255-0309-00	Square Inch	.065	CS
Hydrocarbon Foam	Black	50 Durometer Felt Liner, Pressure Sensitive Adhesive Webbing	.250 x 48 x 48	254-0653-00	Sheet	51.030	CR
Neoprene			.062 x 36	252-0506-00			OB
Neoprene Foam			.485 x 1 x 6	252-0565-00	Inch	.351	CR
Nylon			1.500 Wide	252-0732-00	Yard	.178	CR
Phenolic Butyrol			.002 x 12 x 18	254-0697-00	Square Inch	.005	CR
Plastic	Clear	Epoxy-reinforced Glass Fabric, Flame Retardant	.008 x 12 x 18	255-0698-00	Sheet	3.250	PP
Plastic		Paper Liner, Pressure Sensitive Adhesive	9 x 12	002-0147-00	Square Inch	.183	CR
Plastic		Unclad	.061 x 13 x 20	254-1005-00	Square Inch	.033	CR
Plastic	Black	.001 Acrylic Adhesive Epoxy-reinforced Glass Fabric, Flame Retardant	.125 x 24 x 48	107-0049-00	Sheet	8.620	PP
Plastic	Black		.250 x 24 x 48	107-0047-00			PP
Plastic			.031 x 24 (Roll)	255-0941-00	Square Inch	.012	CR
Plastic			.031 x 12 x 18	255-0699-00	Sheet	2.400	CR
Plastic	Black	Laminated Epoxy-reinforced Glass Fabric	1.500 x 24 x 48	107-0050-00			CR
Plastic	Black		1.375 x 24 x 48	107-0046-00	Each	385.200	PP
Plastic	Natural		.187 x 24 x 48	255-1100-00	Square Inch	.060	CR
Plastic			.062 x 13 x 24	107-0051-00 ^b	Square Inch	.046	CR
Polyethylene	Charcoal Gray, Voltek, Type L200		.125 x 24 x 24	252-0578-00			OB
Polyethylene Foam		2 Pound Density	.625 x 48 x 48	255-0457-00	Square Inch	.007	CR
Polypropylene	Natural	High Impact Commercial Grade Copper Clad Unfilled and Unreinforced Black Ridged Vinylite	.020 x 48 x 96	255-0146-00	Square Inch	.002	LR
Polystyrene	Translucent White		.020 x 18	255-0411-00	Sheet	.930	CR
Polysulfone	Natural Opaque		.060 x 12 x 18	255-0575-01	Sheet	31.200	CR
Polysulfone			.061 x 24 x 48	255-0575-00	Sheet	57.960	CR
PVC			.020 x 21 x 51	255-0665-00			OB
Rubber	Blue Blue	70 Durometer	.060 x 18 x 18	255-0177-00	Square Inch	.197	CR
Rubber		Neoprene, 35-45 Durometer	.015 x 36	252-0555-00	Inch	.732	CR
Silicone Rubber			.125 x 36 x 36	252-0545-00			OB
Triacetate			.005 x 19 x 25	006-2979-00			DL
Triacetate			.005 x 19 x 19	006-2980-00			DL
Vinyl	Clear	Rated, Not Recognized	.013 x 22	254-0960-00	Square Inch	.001	CR
Vinyl	Red		.030 x 10 x 12	255-0168-00			OB
Vinyl	Clear		.0125 x 22	254-0960-03			DL

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b UL approved.

SHAPES

ELECTRICAL INSULATING MATERIAL

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.001 x 24	Kraft Paper	252-0551-00	Pound	2.930	DL
.002 x 24	Kraft Paper	252-0516-00	Pound		CR
.003 x 24 x 36	Nomex Paper/Nylon #410	252-0617-00	Sheet		DL
.003 x 24 x 36	Kraft Paper	252-0737-00	Pound		DL
.004 x 24	Kraft Paper #1A775	252-0517-00	Pound		DL
.005 x .500	Fibremat I #2539 Uncoated, White	253-0123-00	Foot	.029	DL
.005 x .875	Nomex Paper M Aramid & Mica Paper	253-0330-00	Foot		DL
.005 x 1.000	Acetal, Delrin 900	253-0285-00	Foot		DL
.005 x 1.000 x 300 Feet	Crepe Paper, Untreated	252-0691-00	Foot		DL
.005 x 1.375	Kraft Paper #107	252-0524-00			DL
.005 x 1.500	Nomex Paper/Nylon #410	252-0688-00	Foot		DL
.005 x 24	Kraft Paper #30005	252-0518-00	Pound		DL
.005 x 24 x 36	Nomex Paper/Nylon #410	252-0630-00	Sheet		DL
.0055 x .750	Fibremat I #2540 Polyester Reinforced, White	253-0020-00	Foot		CR
.0055 x 2.250	Fibremat I #2540 Polyester Reinforced	253-0022-00			OB
.0055 x 3.000	Fibremat I #2540 Polyester Reinforced, White	253-0046-00	Foot		DL
.006 x .375	Fibremat IV Polyester Web/Film/Web, Yellow	253-0172-00	Foot		DL
.006 x .438	DMD100-2-2-2, Yellow	253-0181-00	Foot		DL
.006 x .500	DMD100-2-2-2, Yellow	253-0124-00	Foot		DL
.006 x .625	Polyester - Mat - Film - Mat	253-0332-00	Foot		DL
.006 x .688	DMD100-2-2-2, Yellow	253-0159-00	Foot	.043	DL
.006 x 1.000	DMD100-2-2-2, Yellow	253-0203-00	Foot		DL
.006 x 1.250	Polyester - Mat - Film - Mat	253-0258-00	Foot		DL
.006 x 1.437	DMD100-2-2-2, Yellow	253-0158-00	Foot		CR
.006 x 1.312	Estermat DM100	253-0265-01	Foot		DL
.006 x 1.500	Estermat DM100	253-0265-00	Foot		DL
.006 x 1.875	DMD100-2-2-2, Yellow	253-0096-00			OB
.006 x 2.000	DMD100-2-2-2, Yellow	253-0081-00	Foot		DL
.006 x 2.250	DMD100-2-2-2, Yellow	253-0080-00	Foot		DL
.006 x 3.000	DMD100-2-2-2, Yellow	253-0082-00	Foot		DL
.006 x 24	DMD100-2-2-2, Yellow	253-0127-00	Foot		DL
.007 x 1.843	Fibremat III #2544 Polyester Reinforced, Yellow	253-0092-00			OB
.007 x 2.000	Fibremat III #2544 Polyester Reinforced, Yellow	253-0038-00			DL
.007 x 2.250	Fibremat III #2545 Polyester Reinforced, Yellow	253-0025-00			OB
.007 x 24	Fibremat II Varnished Mat, Yellow	252-0532-00			DL
.007 x 24 x 36	Nomex Paper/Nylon #410	252-0633-00	Sheet	3.030	CR
.010 x 1.280	Custom Cuffed Rag Paper	252-0725-00	Foot		DL
.010 x 2.940	100% Rag Paper	252-0521-00	Pound		DL
.010 x 24 x 36	Nomex Paper/Nylon #410	252-0689-00	Square Inch		DL

SHEETS

FIBER SHEET (FISH PAPER)

Dimensions (Inch)	Description	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
.005 x 24	Phenolic Impregnated	252-0537-00	Square Inch	.001	CR
.015 thick	Phenolic Impregnated	252-0523-00	Pound	1.330	CR
.020 x 25 x 40	Phenolic Impregnated	252-0514-00 ^b	Pound	2.990	CR
.031 x 12 x 20	Phenolic Impregnated	006-3424-00	Sheet	.530	CR
.031 x 16 x 20	Phenolic Impregnated	006-2825-00			DL
.031 x 24 x 42	Phenolic Impregnated	252-0504-00	Pound	8.044	CR
.125 x 24 x 40	Phenolic Impregnated	252-0530-00			OB

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Safety controlled.

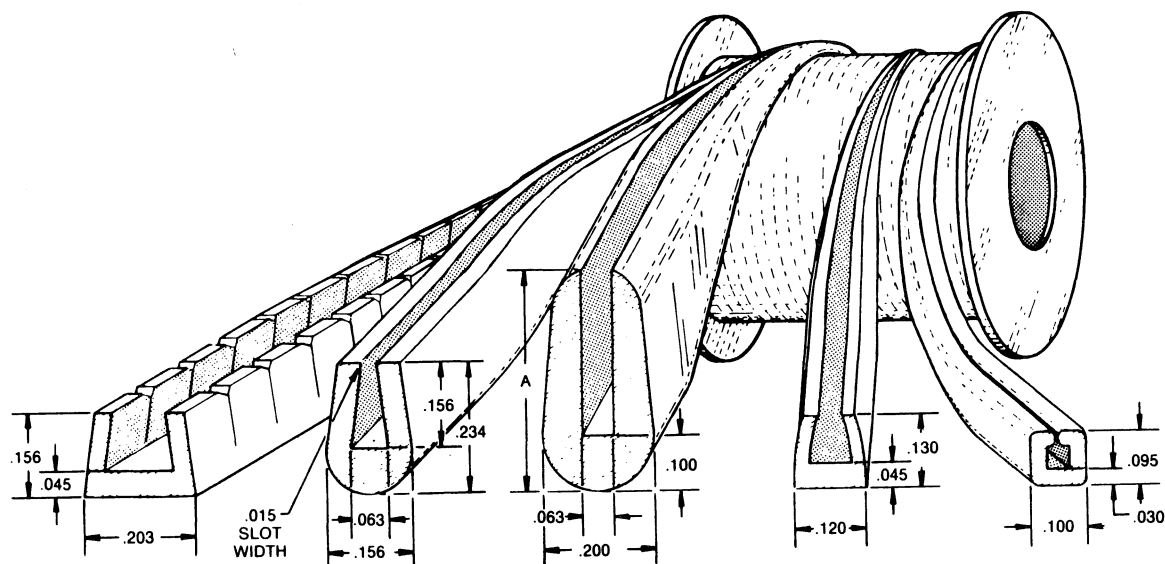
FELT

Dimensions (Inch)	Description	Remarks	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
.062 x 2.000 x 50.	Lt. Gray		252-0745-00	Foot	.360	CR
.062 x 9.218 x 15.031	Blue #107		107-0021-00			OB
.062 x 10.687 x 15.031	Blue #107		107-0022-00			OB
.062 x 10.750 x 15.687	Blue #107		107-0023-00	Each	1.380	CR
.062 x 13.452 x 19.100	Earth Brown		107-0037-01	Each	1.248	CS
.062 x 14.437 x 15.031	Blue #107		107-0037-00	Sheet	1.380	CR
.062 x 14.437 x 15.031	Brown #3308	Pressure Sensitive Adhesive Back	107-0038-00	Sheet	2.950	CR
.062 x 72	Black #200	50% Wool, 50% Rayon	252-0548-00	Square Inch	.005	CR
.125 x 1.000 x 50 Feet	Gray #8533	Pressure Sensitive Tape, One Side	252-0511-00	Foot	.205	CS
14.000 x 35 to 40 Yards	Blue #3425-39	100% Wool	252-0529-00	Yard	2.850	CS

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC CHANNEL (cont)

THESE CHANNELS COME IN 100-FOOT ROLLS.



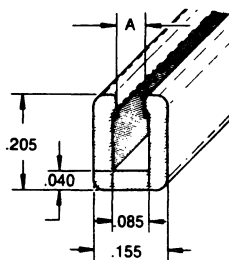
255-0619-00^b
COST:^a .353/FT NYLON
PANEL THICKNESS: .106 to .164
ST:^a CR

252-0571-00
COST:^a .320/FT
BLACK NEOPRENE
ST:^a CR

252-0509-00 COST:^a .222/FT
DIM A .400
BLACK RUBBER
ST:^a CS
255-0778-00 COST:^a .218/FT
DIM A .313
BLACK PVC
ST:^a CR

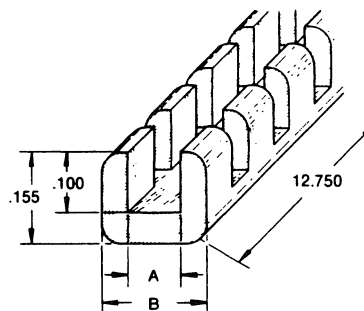
252-0562-00
COST:^a .082/FT
NATURAL POLYETHYLENE
ST:^a CR

255-0713-00
PVC
ST:^a DL



255-0412-00
COST:^a .176/FT ST:^a CS
DIM A .065
NATURAL VINYL
RANDOM LENGTHS

255-0249-00
COST:^a .087/FT ST:^a CR
DIM A .050
BLACK VINYL
RANDOM LENGTHS

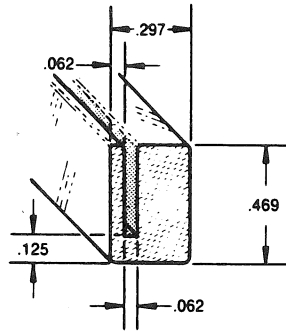


Part Number	Panel Thickness	Material	Codes ^a		Dim A	Dim B
			Cost	ST		
255-0334-00 ^b	.055 - .085	Nylon	.460/Ea	CR	.090	.175
255-0806-00	.128 - .192	Nylon	.440/Ea	CS	.131	.220

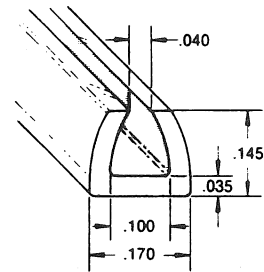
^a The nominal price (at time of printing) is listed as COST or in the Cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Safety Controlled.

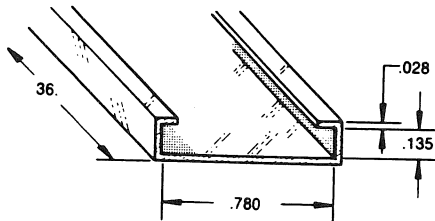
PLASTIC CHANNEL (cont)



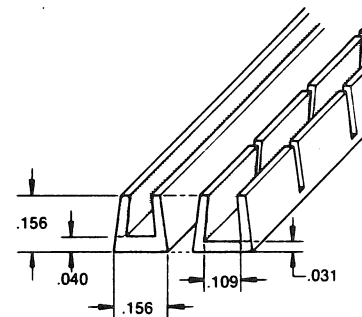
255-0648-00
COST:^a .450/EA ST:^a CS
BLACK NEOPRENE
11.000 to 11.125 INCHES LONG



252-0564-00
COST:^a .033/FT ST:^a CR
NATURAL POLYETHYLENE
RANDOM LENGTHS



255-0450-00
ST:^a DL
BLACK POLYETHYLENE



255-0581-00
COST:^a .073/FT ST:^a CR
POLYETHYLENE
.037 to .105
PANEL THICKNESS

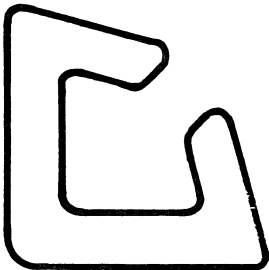
255-0689-00
COST:^a .128/FT ST:^a CS
POLYETHYLENE
.037 to .105
PANEL THICKNESS

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

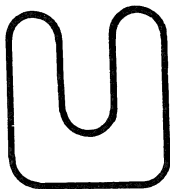
PLASTIC EXTRUSIONS



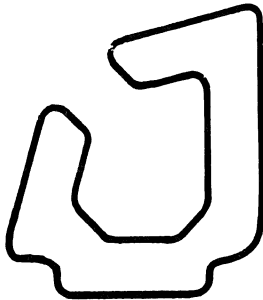
252-0553-00 COST:^a .130/FT ST:^a CR
POLYURETHANE (255-0123-00) BLACK



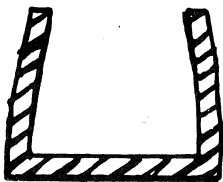
255-0630-03 ST:^a DL
ABS, EARTH BROWN



255-0678-00 COST:^a 4.080/FT ST:^a CR
CHO-SEAL 1250



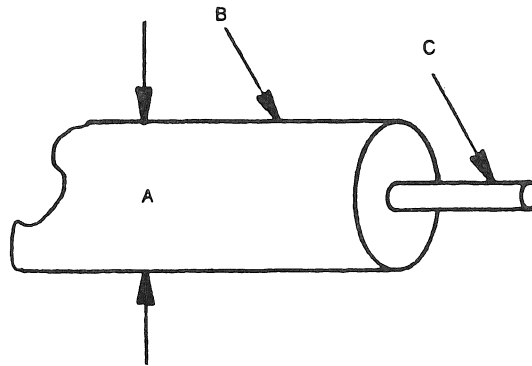
255-0717-03 ST:^a DL
ABS, EARTH BROWN



252-0562-02 COST:^a .093/FT ST:^a CR
POLYETHYLENE, CLEAR

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

PLASTIC CORE MATERIAL



Diameter A	Material		Part Number	Unit of Measure	Codes ^a	
	B	C			Cost	ST
.038 ± .0005	Polyethylene (255-0215-00)	Thread, Glass (253-0073-00)	255-0556-00	Foot	.036	CR
.050 ± .0005	Polyethylene (255-0215-00)	Thread, Glass (253-0073-00)	255-0530-00	Foot	.036	CR
.075 ± .0005	Polyethylene (255-0215-00)	Thread, Glass (253-0073-00)	255-0627-00	Foot	.031	CR
.075 ± .003	PVC (255-0720-00)	Thread, Glass (253-0073-00)	255-0777-00	Foot	.029	CR

^a The nominal price (at time of printing) is listed in the Cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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		252-0568-00	2-10	254-0505-00	2-2	255-0108-00	2-2
		252-0570-00	2-10	254-0507-00	2-2	255-0116-00	2-2
		252-0571-00	2-14	254-0509-00	2-9	255-0118-00	2-7
		252-0578-00	2-11	254-0510-00	2-9	255-0119-00	2-7
006-0211-00	2-6	252-0589-00	2-10	254-0512-00	2-9	255-0120-00	2-7
006-0212-00	2-6	252-0591-00	2-10	254-0514-00	2-9	255-0121-00	2-7
006-0213-00	2-6	252-0597-00	2-10	254-0515-00	2-9	255-0122-00	2-7
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006-1793-00	2-6	252-0617-00	2-12	254-0530-00	2-2	255-0126-00	2-8
006-1796-00	2-7	252-0630-00	2-12	254-0531-00	2-9	255-0127-00	2-2
006-2825-00	2-12	252-0633-00	2-12	254-0534-00	2-9	255-0132-00	2-2
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252-0532-00	2-12	253-0293-00	2-7	255-0029-00	2-2	255-0237-00	2-9
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255-0424-00	2-5	255-0703-00	2-4		
255-0425-00	2-5	255-0713-00	2-14		
255-0427-00	2-10	255-0717-03	2-16		
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255-0432-00	2-5	255-0734-00	2-2		
255-0433-00	2-5	255-0758-00	2-4		
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255-0455-00	2-5	255-0780-00	2-6		
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255-0475-00	2-5	255-0808-00	2-10		
255-0481-00	2-5	255-0833-00	2-8		
255-0486-00	2-10	255-0866-00	2-6		
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255-0492-00	2-6	255-0904-00	2-4		
255-0493-00	2-6	255-0905-00	2-4		
255-0503-00	2-8	255-0906-00	2-4		
255-0506-00	2-5	255-0914-00	2-4		
255-0514-00	2-10	255-0916-00	2-6		
255-0516-06	2-7	255-0917-00	2-6		
255-0528-00	2-2	255-0919-00	2-7		
255-0530-00	2-17	255-0939-00	2-6		
255-0533-00	2-7	255-0941-00	2-11		
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255-0551-00	2-10	255-0944-00	2-7		
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Do not use Tektronix Part Numbers for Circuit Board Material on Specification Drawings. Refer to MIL-P-B949S Supplements 1 thru 14 and QPL-13949-50 which are available from Technical Standards.

UL rating note: Except as noted, material has UL V-0 rating. After processing by TEKTRONIX, INC., flame rating of material will be UL94 V-1 or better. Refer to Tektronix Standard 062-1778-01 for design and fabrication requirements of flammability classed circuit boards. For more information, contact Product Safety Engineering, 627-1815.

CIRCUIT BOARD MATERIAL

EPOXY GLASS LAMINATE

Thickness	Thickness Tolerance ±	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
		12.125 x 18.125	1/1	254-0500-00	Sheet	4.000	CR
.001		12.125 x 18.125	1/1	254-0500-01	Sheet	7.810	CR
.002		24 x 36	.5/0	254-0010-00	Sheet	10.000	PP
.002		24 x 36	2/2	254-0011-00	Sheet	100.000	PP
.002		24 x 41	1/1	254-0029-00	Sheet		CR
.0025 Excluding Foil		12 x 18	.5/0	254-0588-01	Sheet	2.740	CR
.0025 Excluding Foil	.001	12 x 20	.5/0	254-0588-00	Sheet	3.340	CS
.003		24 x 41	1/1	254-0030-00	Sheet		CR
.004 Excluding Foil		12 x 18	1/0	254-0570-08	Sheet	2.590	CR
.004 Excluding Foil	.001	12 x 18	1/1	254-0570-02	Sheet	2.910	CR
.004 Excluding Foil		12 x 18	1/1	254-0570-07	Sheet	3.220	CR
.004 Excluding Foil	.001	12 x 20	1/1	254-0570-00	Sheet	4.050	CR
.004 Excluding Foil	.001	12 x 20	1/0	254-0570-01	Sheet	3.070	CR
.004 Excluding Foil	.001	18 x 18	1/0	254-0570-04	Sheet	4.620	CR
.004 Excluding Foil		18 x 24	1/0	254-0570-05	Sheet	4.990	CR
.004		18 x 24	1/1	254-0570-06	Sheet	6.010	CR
.006 Excluding Foil		12 x 18	1/0	254-0571-05	Sheet	2.860	CR
.006 Excluding Foil	.001	12 x 18	1/1	254-0571-04	Sheet	3.360	CR
.006		12 x 18	2/2	254-0571-08	Sheet	4.990	CR
.006 Excluding Foil	.0015	12 x 20	.5/0	254-0629-00	Sheet	4.920	CS
.006 Excluding Foil	.0015	12 x 20	1/0	254-0571-01	Sheet	3.500	CR
.006 Excluding Foil	.0015	12 x 20	1/1	254-0571-00	Sheet	3.870	CS
.006		18.125 x 18.125	1/1	254-0571-09	Sheet	4.940	CR
.006 Excluding Foil		18 x 24	1/0	254-0571-06	Sheet	6.390	CR
.006 Excluding Foil		18 x 24	1/1	254-0571-07	Sheet	6.520	CR
.006		18 x 24	2/2	254-0572-20	Sheet	8.850	CR
.008		18.125 Sq.	3/3	254-0572-21	Sheet	8.880	CR
.008		12 x 18	1/1	254-0572-05	Sheet	3.160	CR
.008 Excluding Foil	.0015	12 x 18	.5/5	254-0572-07			DL
.008 Excluding Foil		12 x 18	.5/5	254-0572-15	Sheet	3.540	CR
.008 Excluding Foil	.0015	12 x 18	1/0	254-0572-06	Sheet	2.900	CR
.008 Excluding Foil		12 x 18	1/1	254-0572-12	Sheet	3.090	CR
.008 Excluding Foil		12 x 18	2/2	254-0635-02	Sheet		CR
.008 Excluding Foil		12 x 18	2/2	254-0635-03	Sheet	4.610	CR
.008		12 x 18	4/4	254-0584-02	Sheet	6.950	CR
.008 Excluding Foil	.0015	12 x 20	1/0	254-0572-01	Sheet	3.520	CR
.008 Excluding Foil	.0015	12 x 20	1/1	254-0572-00	Sheet	3.800	CR
.008 Excluding Foil	.0015	12 x 20	4/4	254-0584-00 ^b	Sheet	8.050	CR
.008 Excluding Foil		16 x 20	2/1	254-0641-00			OB
.008 Excluding Foil	.0015	16 x 20	2/2	254-0635-00	Sheet	6.530	CS
.008 Excluding Foil	.0015	18 x 18	1/1	254-0572-03	Sheet	5.220	CR
.008 Excluding Foil		18 x 24	.5/5	254-0572-10	Sheet	7.540	CR
.008		18 x 24	.5/5	254-0572-18	Sheet	5.790	CR
.008		18 x 24	.5/5	254-0572-19	Sheet	7.870	CR
.008 Excluding Foil		18 x 24	1/0	254-0572-14	Sheet	6.880	CR
.008 Excluding Foil		18 x 24	1/1	254-0572-09	Sheet	6.880	CR
.008 Excluding Foil		18 x 24	2/1	254-0641-01	Sheet	7.420	CR
.008 Excluding Foil		18 x 24	2/2	254-0635-01	Sheet	9.190	CR
.008 Excluding Foil		18 x 24	4/4	254-0584-01	Sheet	13.890	CR
.008 Excluding Foil	.001	24 x 30	.25/0	254-0658-00	Sheet	19.350	CS
.009 Excluding Foil		12 x 18	1/1	254-0572-11	Sheet	3.570	CR
.010		12 x 18	.5/5	254-0019-00	Sheet	106.000	CR
.010 Excluding Foil		12 x 18	1/1	254-0580-01	Sheet	3.860	CR
.010 Excluding Foil	.0015	12 x 20	1/1	254-0580-00	Sheet	4.500	CR
.010		18 x 24	2/5	254-0580-02	Sheet	8.440	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Material does not have UL recognition.

CIRCUIT BOARD MATERIAL (cont)

EPOXY GLASS LAMINATE (cont)

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.012		12 x 18		254-0568-14	Sheet	3.060	CR
.012		18.125 x 24.125	2/1	254-0568-15	Sheet	8.860	CR
.012 Excluding Foil		12 x 18	.5/.5	254-0568-13	Sheet	3.490	CR
.012 Excluding Foil		12 x 18	1/0	254-0568-11	Sheet	2.980	CR
.012 Excluding Foil	.002	12 x 18	1/1	254-0568-04	Sheet	3.980	CR
.012 Excluding Foil	.002	12 x 20	1/0	254-0568-01	Sheet	3.800	CR
.012 Excluding Foil	.002	18 x 18	1/1	254-0568-00	Sheet	4.080	CR
.012 Excluding Foil		12 x 18	1/1	254-0568-10	Sheet	3.490	CR
.012 Excluding Foil	.002	18 x 18	1/1	254-0568-03	Sheet	6.700	CR
.012 Excluding Foil		18 x 24	.5/.5	254-0568-12	Sheet	6.790	CR
.012 Excluding Foil		18 x 24	1/0	254-0568-09	Sheet	5.770	CR
.012 Excluding Foil		18 x 24	1/1	254-0568-08	Sheet	6.790	CR
.015 Excluding Foil		12 x 18	.5/.5	254-0573-15	Sheet	3.150	CR
.015 Excluding Foil		12 x 18	1/0	254-0573-12	Sheet	2.720	CR
.015		12 x 18	1/1	254-0573-05	Sheet	3.430	CR
.015 Excluding Foil		12 x 18	1/1	254-0573-11	Sheet	3.150	CR
.015		12 x 18	2/0	254-0573-19	Sheet	2.460	CR
.015		12 x 18	2/2	254-0573-17	Sheet	4.150	CR
.015 Excluding Foil	.002	12 x 20	1/0	254-0573-01	Sheet	3.570	CR
.015 Excluding Foil	.002	12 x 20	1/1	254-0573-00	Sheet	4.220	CR
.015 Excluding Foil	.015	18 x 18	1/1	254-0573-04	Sheet	4.750	CR
.015 Excluding Foil		18 x 24	.5/.5	254-0573-16	Sheet	6.150	CR
.015 Excluding Foil		18 x 24	1/0	254-0573-14	Sheet	4.960	CR
.015 Excluding Foil		18 x 24	1/1	254-0573-09	Sheet	6.100	CR
.015		18 x 24	2/1	254-0573-18	Sheet	5.910	CR
.015 Excluding Foil	.002	36 x 48	1/1	254-0639-00	Sheet	25.500	CR
.021 Excluding Foil		12 x 18	1/2	254-0628-02	Sheet	4.720	CR
.021		12.125 x 18.125	1/0	254-0628-05	Sheet		CR
.021 Excluding Foil		18 x 24	1/2	254-0628-03	Sheet	4.230	CR
.021		18.125 x 24.125	1/0	254-0628-04	Sheet	7.600	CR
.021		18.125 x 24.125	1/0	254-0628-06	Sheet	7.490	CR
.022		12 x 18	.5/.5	254-0602-06	Sheet	3.630	CR
.022 Excluding Foil		12 x 18	1/1	254-0602-03	Sheet	5.010	CR
.022 Excluding Foil	.002	12 x 20	1/1	254-0602-00	Sheet	3.600	CR
.022		18 x 18	1/1	254-0602-07	Sheet	9.470	CR
.022 Excluding Foil		18 x 24	.5/.5	254-0602-05	Sheet	9.900	CR
.022 Excluding Foil	.002	36 x 48	1/1	254-0602-02	Sheet		CR
.022 Excluding Foil	.003	36 x 48	1/1	254-0661-00	Sheet	25.050	CR
.023 Excluding Foil		12 x 18	1/0	254-0577-18	Sheet	3.150	CR
.023 Excluding Foil		12 x 18	1/1	254-0577-21	Sheet	3.670	CR
.023		12 x 18	1/1	254-0577-26	Sheet	6.060	CR
.023		12 x 18	1/1	254-0577-27	Sheet	3.860	CR
.023 Excluding Foil	.003	12 x 20	1/0	254-0577-01	Sheet	2.560	CR
.023 Excluding Foil	.003	12 x 20	1/1	254-0577-00	Sheet	2.810	CR
.023 Excluding Foil		18 x 24	1/0	254-0577-17	Sheet	6.100	CR
.023 Excluding Foil		18 x 24	1/1	254-0577-22	Sheet	7.180	CR
.023 Excluding Foil		18 x 24	1/1	254-0602-04			DL
.023 Excluding Foil	.003	36 x 48	1/0	254-0640-01			OB
.023 Excluding Foil	.003	36 x 48	1/1	254-0640-00	Sheet	31.070	CR
.025 Excluding Foil		12 x 18	.5/.5	254-0577-20	Sheet	3.640	CR
.025 Excluding Foil		12 x 18	1/0	254-0577-13	Sheet	3.150	CR
.025 Excluding Foil		12 x 18	1/1	254-0577-12	Sheet	3.640	CR
.025 Excluding Foil		12 x 18	1/1	254-0577-24	Sheet	3.980	CR
.025		12 x 18	1/1	254-0577-25	Sheet	6.060	CR
.025 Excluding Foil	.003	12 x 20	1/0	254-0577-04	Sheet	2.900	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

CIRCUIT BOARD MATERIAL (cont)

EPOXY GLASS LAMINATE (cont)

Thickness	Thickness Tolerance ±	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.025 Excluding Foil	.002	12 x 20	1/1	254-0577-02	Sheet	5.300	CR
.025 Excluding Foil	.003	12 x 20	1/1	254-0577-03	Sheet	4.790	CR
.025 Excluding Foil	.004	13 x 20	1/1	254-0559-00	Sheet		OB
.025 Excluding Foil	.003	16 x 20	1/1	254-0607-00			DL
.025 Excluding Foil	.003	18 x 18	1/1	254-0577-06	Sheet	5.370	CR
.025 Excluding Foil		18 x 24	.5/0	254-0590-01	Sheet	7.000	CR
.025 Excluding Foil		18 x 24	.5/5	254-0577-14	Sheet	7.090	CR
.025 Excluding Foil		18 x 24	1/0	254-0577-15	Sheet	6.100	CR
.025 Excluding Foil		18 x 24	1/1	254-0577-16	Sheet	7.090	CR
.025 Excluding Foil		18 x 24	1/1	254-0559-01	Sheet	7.610	CR
.025 Excluding Foil		18 x 24	1/1	254-0577-19	Sheet	7.780	CR
.025 Excluding Foil		18 x 18	1/1	254-0577-23	Sheet	5.880	CR
.028 Excluding Foil		12 x 18	1/1	254-0551-06	Sheet	4.000	CR
.028 Excluding Foil		12 x 18	1/1	254-0627-03	Sheet	4.000	CR
.028 Excluding Foil		12 x 18	2/2	254-0627-06	Sheet	5.010	CR
.028 Excluding Foil		12 x 18	3/2	254-0627-07	Sheet	5.500	CR
.028 Excluding Foil	.003	12 x 20	1/1	254-0551-04	Sheet	4.990	CR
.028 Excluding Foil	.004	13 x 20	1/1	254-0551-00	Sheet	4.340	CR
.028 Excluding Foil		18 x 24	1/1	254-0551-07	Sheet	7.810	CR
.028 Excluding Foil		18 x 24	1/1	254-0627-02	Sheet	7.810	CR
.028 Excluding Foil		18 x 24	2/1	254-0627-05	Sheet	8.960	CR
.028 Excluding Foil		18 x 24	2/2	254-0627-04	Sheet	9.820	CR
.028 Excluding Foil	.003	36 x 48	1/1	254-0627-00	Sheet	28.580	CR
.030 Excluding Foil		12 x 18	1/0	254-0638-01	Sheet	3.790	CR
.030 Excluding Foil		12.125 x 18.125	1/5	254-0638-03	Sheet	4.230	CR
.030 Excluding Foil		12.125 x 18.125	1/1	254-0638-02	Sheet	4.230	CR
.030 Including Foil	.003	36 x 48	.5/0	254-0656-00	Sheet	31.470	CR
.030 Excluding Foil	.003	36 x 48	1/0	254-0638-00	Sheet	30.300	CR
.031 Including Foil	.004	12 x 18	.5/5	254-0663-00	Sheet	3.990	CR
.031 Including Foil		12 x 18	.5/5	254-0007-00	Sheet	.492	PP
.031		12 x 18	.5/0	254-0008-00	Sheet		PP
.031		12 x 18	.5/5	254-0663-01	Sheet	4.610	CR
.031	.0015	12 x 18	1/1	254-0693-00	Sheet	3.400	PP
.035		18 x 24	2/0	254-1002-00	Sheet	8.590	CR
.039		18 x 24	1/0	254-1003-00	Sheet	8.630	CR
.0405		12 x 18	.5/5	254-0681-00	Sheet	4.660	CR
.0405		18 x 24	.5/5	254-0577-28	Sheet	8.500	CR
.042		12 x 18	1/1	254-1001-07	Sheet	5.310	CR
.0443 Excluding Foil	.005	18 x 18	1/1	254-1001-00	Sheet	8.340	CR
.044		18 x 24	.5/5	254-1004-00	Sheet	12.310	CR
.0445		18 x 24	1/1	254-1001-08	Sheet	10.240	CR
.045		12 x 18	1/1	254-0675-00	Sheet	4.480	CR
.0475		12 x 18	2/2	254-1001-05	Sheet	5.590	CR
.047		18 x 24	1/1	254-1001-04	Sheet	8.590	CR
.047		18 x 24	2/2	254-1001-06	Sheet	12.310	CR
.047		18 x 24	.5/5	254-1001-09	Sheet	5.700	CR
.053 Including Foil	.004	9 x 12	1/1	254-0593-08	Sheet	3.930	CR
.056 Including Foil	.004	12 x 18	1/1	254-0593-03	Sheet	5.750	CR
.056 Including Foil	.004	12 x 18	1/1	254-0593-05	Sheet	3.740	CR
.056 Excluding Foil	.004	13 x 20	1/1	254-0593-00	Sheet	5.860	CR
.056 Including Foil	.004	18 x 24	1/1	254-0593-07	Sheet	7.480	CR
.058		12 x 18	.5/0	254-0594-01	Sheet	5.190	CR
.058 Including Foil		12 x 18	1/0	254-0541-14	Sheet	3.690	CR
.058 Excluding Foil	.004	12 x 20	1/0	254-0594-00			DL
.059 Excluding Foil	.004	9 x 12	1/1	254-0623-01	Sheet	1.860	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

CIRCUIT BOARD MATERIAL (cont)

EPOXY GLASS LAMINATE (cont)

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.059 Including Foil		12 x 18	.125/.125	254-0541-16	Sheet	7.270	CR
.059 Including Foil		12 x 18	1/1	254-0541-12	Sheet	4.180	CR
.059 Excluding Foil		12 x 18	1/1	254-0604-02	Sheet	5.610	CR
.059 Including Foil		12 x 18	1/1	254-0541-17	Sheet	3.480	CR
.059 Including Foil		12 x 18	2/2	254-0541-22	Sheet	5.140	CR
.059 Including Foil	.004	13 x 20	1/1	254-0541-00	Sheet	6.290	CR
.059 Excluding Foil	.004	13 x 20	1/1	254-0564-00	Sheet	3.610	CR
.059 Including Foil		18 x 18	1/1	254-0541-20	Sheet	7.960	CR
.059		18 x 24	.5/.5	254-0541-23	Sheet	7.990	CR
.059 Including Foil		18 x 24	1/1	254-0541-13	Sheet	7.990	CR
.059 Excluding Foil		18 x 24	1/1	254-0604-03	Sheet	11.220	CR
.059 Including Foil		18 x 24	2/2	254-0541-15	Sheet	10.270	CR
.059 Including Foil	.004	36 x 48	1/1	254-0623-04	Sheet	29.760	CS
.060		12 x 18	1/1	254-0541-21	Sheet	4.950	CR
.060 Including Foil	.004	12 x 18	1/1	254-0603-00	Sheet	3.790	CR
.060 Including Foil	.004	12 x 18	1/1	254-0603-01	Sheet	3.580	OT
.060 Including Foil	.004	13 x 20	1/1	254-0604-00	Sheet	5.490	CR
.060 Including Foil	.004	18 x 18	1/1	254-0541-10	Sheet	6.090	CR
.060 Including Foil	.004	36 x 48	1/1	254-0541-06	Sheet	30.480	CR
.061 Including Foil	.004	12 x 18	.5/.5	254-0541-18	Sheet	4.180	CR
.061 Excluding Foil		12 x 18	.5/.5	254-0659-02	Sheet	3.610	CR
.061 Excluding Foil	.004	13 x 20	.5/.5	254-0659-01	Sheet	4.640	CS
.061 Excluding Foil		18 x 18	.5/.5	254-0659-07	Sheet	5.050	CR
.061 Including Foil	.004	18 x 24	.5/.5	254-0541-19	Sheet	7.790	CR
.061 Excluding Foil		18 x 24	.5/.5	254-0659-03	Sheet	6.960	CR
.062		12 x 18	.5/.5	254-0009-00	Sheet		PP
.062 Excluding Foil	.004	12 x 18	1/1	254-0541-09	Sheet	3.770	CR
.064		12 x 18	2/2	254-0541-24	Sheet	5.140	CR
.090 Excluding Foil		12 x 18	1/1	254-0548-01	Sheet	6.540	CR
.090 Excluding Foil	.009	13 x 20	1/1	254-0548-00	Sheet	7.760	CR
.090 Excluding Foil		18 x 24	1/1	254-0548-02	Sheet	12.700	CR
.093 Excluding Foil	.009	13 x 20	1/1	254-0624-02	Sheet	7.810	CR
.122 Excluding Foil		12 x 18	1/1	254-0578-02	Sheet	8.880	CR
.122 Excluding Foil	.012	13 x 20	1/1	254-0578-00	Sheet	9.850	CR
.122 Excluding Foil		18 x 24	1/1	254-0578-03	Sheet	17.380	CR
.122 Excluding Foil	.012	36 x 48	1/1	254-0634-00	Sheet	56.850	CR
.123 Excluding Foil		36 x 48	1/1	254-0634-01	Sheet	8.360	CR
.125 Excluding Foil		13 x 20	1/1	254-0578-01	Sheet		CR

TEFLON GLASS LAMINATE

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.008 Excluding Foil	.001	23 x 35	1/1	254-0592-00	Sheet	99.520	CR
.010 Excluding Foil	.007	10 x 16	.5/.5	254-0648-00	Sheet	59.410	CR
.021 Excluding Foil	.0015	12 x 18	.5/.5	254-0657-00	Sheet	26.500	CR
.028 Excluding Foil	.0015	12 x 18	.5/.5	254-0655-00	Sheet	34.540	CR
.028 Excluding Foil	.002	12 x 20	1/1	254-0599-00	Sheet		CR
.035 Excluding Foil	.001	10 x 16	.5/0	254-0651-00 ^b	Sheet	101.780	CR
.035 Excluding Foil	.001	10 x 16	.5/.5	254-0652-00 ^b	Sheet	101.780	CR
.062 Excluding Foil	.002	10 x 16	.5/0	254-0650-00 ^b	Sheet	113.700	CR
.093 Excluding Foil	.005	6.5 x 10	1/1	254-0576-00			OB

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Material does not have UL recognition.

CIRCUIT BOARD MATERIAL (cont)

POLYIMIDE LAMINATE

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.0005	.010	12 x 24	.5/0	254-0694-00	Square Inch	.241	PP
.001 Excluding Foil		12 x 18	1/0	254-0676-00			NP
.001 Excluding Foil		12 x 18	1/1	254-0678-00			NP
.001		19 Wide	1/0	254-0005-00	Square Inch	.017	PP
.001 Excluding Foil		24 Wide	1/0	254-0677-00	Square Inch	.041	CR
.001 Excluding Foil	.010	24 Wide	1/1	254-0679-00	Square Inch	.054	CR
.002		12 Wide	1/0	254-0673-00	Square Inch	.115	CR
.002		12 x 18	1/1	254-0670-00	Square Inch	.040	CR
.002 Excluding Foil		12 x 18	1/0	254-0668-00			NP
.002 Excluding Foil		12 x 20	1/1	254-0643-00			NP
.002	- .000	19 Wide	1/1	254-0686-00	Square Inch	.021	CR
.002 Excluding Foil		21 x 36	1/0	254-0598-00 ^b	Square Inch	.049	CR
.002 Excluding Foil		24 Wide	1/0	254-0669-00	Square Inch	.009	CR
.002 Excluding Foil		24 Wide	1/1	254-0671-00	Square Inch	.073	CR
.002		24 Wide	1/1	254-0685-00	Square Inch	.014	CR
.002	.010	24 Wide	1/0	254-0687-00	Square Inch	.024	CR
.002 Excluding Foil		24 x 36	2/0	254-0598-01 ^b			OB
.002		24 x 36	2/0	254-0975-00	Square Inch	.081	CR
.002		24 x 36	2/2	254-0012-00	Square Inch	.072	PP
.003		12 Wide	1/0	254-0674-00	Square Inch	.115	CR
.003	.010	12 x 18	1/0	254-0682-00	Square Inch	.051	CR
.003		19 Wide	1/0	254-0001-00	Square Inch	.048	CR
.003		19 Wide	1/1	254-0002-00	Square Inch	.068	PP
.003		24 Wide	1/1	254-0691-00	Square Inch	.156	PP
.003		24 x 36	1/1	254-0692-00	Square Inch	83.820	PP
.005	.010	12 x 18	1/0	254-0688-00	Square Inch	.031	PP
.005		19 Wide	1/0	254-0003-00	Square Inch	.059	PP
.005		19 Wide	1/1	254-0004-00	Square Inch	.108	PP
.005		24 Wide	1/0	254-0684-00	Square Inch	.033	PP
.005		24 Wide	2/0	254-0690-00	Square Inch	.084	CR
.005	.010	24 x 36	1/1	254-0689-00	Square Inch	.088	PP

POLYIMIDE GLASS LAMINATE

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.062 Excluding Foil	-.000 + .005	36 x 36	1/1	254-0597-00 ^b	Sheet	21.000	OB
.059		12 x 18	1/1	254-0597-01	Sheet	41.850	CR
.059		18 x 24	1/1	254-0597-02	Sheet		CR

CROSSLINKED POLYSTYRENE LAMINATE

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.062	.004	6.5 x 10	1/1	254-0581-00 ^b	Sheet	39.250	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.^b Material does not have UL recognition.

CIRCUIT BOARD MATERIAL (cont)

UNCURED EPOXY (PRE-PREG)

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
.0025	.001	12 x 18	254-0618-05	Sheet	.840	CR
.0025		12 x 18	254-0618-15	Sheet	.630	CR
.0025		18 x 24	254-0618-17	Sheet	1.150	CR
.0025		12 x 20	254-0618-00	Sheet	.690	CR
.0025		18 x 18	254-0618-11	Sheet	.900	CR
.003	.001	12 x 18	254-0618-20	Sheet	.840	CR
.004		12 x 20	254-0618-04			DL
.004		18 x 18	254-0618-12	Sheet	1.200	CR
.004		7 x 9	254-0618-13	Sheet	.290	CR
.004		12 x 20	254-0618-01	Sheet	.910	CR
.0045	.0015	12 x 18	254-0618-16	Sheet	.820	CR
.0045		18 x 24	254-0618-19	Sheet	1.540	CR
.0045		16 x 20	254-0618-07			DL
.007		12 x 18	254-0618-21	Sheet	.640	CR
.007		18 x 24	254-0618-22	Sheet	1.180	CR
.008	.0015	12 x 18	254-0698-00	Sheet	3.250	PP
.009		18 x 18	254-0618-18	Sheet	.910	CR
.031		12 x 18	254-0699-00	Sheet	2.400	CR

POLYSULPHONE LAMINATE

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Copper Thickness	Part Number	Unit of Measure	Codes ^a	
						Cost	ST
.062	.002	24 x 48	0/0	255-0575-00 ^b	Sheet	57.960	CR
.062	.002	24 x 48	0/0	255-0640-00	Sheet	67.450	CR

EPOXY GLASS LAMINATE (UNCLAD)

Thickness	Thickness Tolerance \pm	Nominal Sheet Size (Inches)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
.031	.004	13 x 20	254-0546-00	Sheet	6.030	CS
.062	.0075 + 1.000 - .0075	12 x 18	254-0566-01			CR
.062		13 x 20	254-0566-00	Square Inch	.046	CR
.062		36 x 48	006-1677-00			DL
.312		13 x 20	006-0438-00	Sheet	2.525	CR

PLASTIC FILM (SHEET)

Thickness	Remarks	Nominal Sheet Size (Inches)	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
.001	Thermoset Adhesive Bonding Fluorocarbon Copolymer Bonding Polyvinyl Fluoride Polyvinyl Fluoride Polyester, Electrical Grade	6 x 9	255-0516-06	Sheet	.895	CR
.0015		12 Wide	254-0600-00 ^b			DL
.002		12 Wide	255-0533-00 ^b			OB
.002		24 Wide	255-0533-01			OB
.005		20 x 50	254-0601-00 ^b			DL
.020	Polycarbonate	24 x 48	255-0295-00 ^b	Square Inch	.005	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Material does not have UL recognition.

EPOXY PREFORMS

Dimensions		ID	OD	Material Thickness Able Film 550	Part Number	Unit of Measure	Codes ^a	
Length	Width						Cost	ST
		.100	.170	.004	255-0697-00 ^b			DL
		.230	.325		255-0541-01	Each	.089	CR
.050	.050			.006	255-0687-00	Each	.073	CR
.125	.080			.004	255-0950-00	Each	.050	PP
.180	.180	.100		.006	255-0588-00			DL
.200	.200			.005	255-1049-00	Each	.073	EN
.275	.250			.004 ± .005	255-0673-00			DL
.300	.300			.006	255-0712-00	Each	.089	CR
.320	.320	.250 sq		.005 ± .001	255-0620-00	Each	.077	CR
.400	.400			.005	255-0667-00	Each	.088	CR
.440	.272			.004	255-0708-00			NP
.440	.272			.006	255-0672-00	Each	.124	CR
.497	.497			.004	255-0671-00	Each	.102	CR
.500	.125			.006	255-0872-00	Each	.085	CR
.500	1.375			.006	255-0873-00	Each	.182	CR
.510	.510	.410 sq		.005 ± .001	255-0650-00			NP
.560	.224			.005 (550T)	255-0699-00			NP
.625	.290			.005	255-1051-00	Each	.142	EN
.700	.700			.006	255-0707-00	Each	.291	CR
.705	.465	.625 x .385		.005 ± .001	255-0628-00			DL
.720	.520	.580 x .380		.005 ± .001	255-0649-00	Each	.211	CR
.775	.865			.005	255-0669-00	Each	.088	CR
.855	.208			.003 (550T)	255-0668-00	Each	.352	CR
.900	.500			.006	255-0706-00	Each	.133	CR
1.180	1.180			.004	255-0959-00	Each	.315	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.^b Able Film 556.

CERAMIC SUBSTRATES

Length	Width	Thickness	Part Number	Unit of Measure	Codes ^a		Source	Material	Standard Base Family	Material Option	Maximum Thickness Remarks
					Cost	ST					
.325	.325	.030	204-0585-00	Each	.404	CR	Tek-made	96% Alumina	A	.100	
.365	.365	.035	204-0499-00	Each	.114	CR	Tek-made	96% Alumina	A	.100	
.520	.520	.025	342-0082-00	Each	.114	CR	Tek-made	96% Alumina	A	.125	
.750	.600	.040	342-0582-01	Each	.116	CS	Tek-made	96% Alumina	A	.150	
.750	.600	.100	342-0582-00	Each	.235	CR	Tek-made	96% Alumina	A	.150	
.850	.300	.062	204-0488-02	Each	.114	CR	Tek-made	96% Alumina	A	.100	
.850	.300	.025	204-0488-01	Each	.114	CR	Tek-made	96% Alumina	A	.100	
.850	.300	.040	204-0488-00	Each	.114	CR	Tek-made	96% Alumina	A	.100	
1.000	.400	.040	307-0211-02	Each	.173	CR	Tek-made	96% Alumina	A	.125	
1.000	.500	.025	204-0511-00	Each	2.050	CR	Tek-made	99.5% Alumina			
1.000	1.000	.050	204-0466-00	Each	9.100	CR	Tek-made	99.5% Alumina			
1.000	1.000	.040	204-0604-00	Each	.406	CR	Tek-made	96% Alumina	A	.100	
1.325	1.000	.040	204-0651-00	Each	.808	CS	Tek-made	96% Alumina	A	.125	2 Holes at Edge
1.480	1.020	.060	204-0603-00	Each	.582	CR	Tek-made	96% Alumina	A	.150	4 Holes Near Edges
1.500	.498	.030	204-0519-00	Each	.660	CR	Tek-made	96% Corundum			
1.500	1.000	.025	204-0586-00	Each	.458	CR	Tek-made	96% Alumina			
1.550	.720	.040	204-0462-02	Each	.700	CS	Tek-made	96% Alumina	A	.100	Cut From 204-0462-01
1.880	.900	.045	342-0449-00	Each	.177	CR	Tek-made	85% Alumina	A	.150	.156 Holes in Ends
1.980	1.980	.060	342-0461-00	Each	1.292	CS	Tek-made	96% Alumina	A	.125	.225 Hole in Center
2.000	.500	.025	204-0512-00	Each	.660	CR	Tek-made	99.5% Alumina			
2.000	1.000	.097	204-0503-01			CR	Tek-made	96% Alumina	A	.150	8 Holes
2.000	1.000	.160	204-0486-02			DL	Tek-made	96% Alumina	A	.160	
2.000	1.000	.040	204-0486-00	Each	.410	CR	Tek-made	96% Alumina	A	.160	
2.000	1.500	.025	204-0537-00	Each	1.925	CR	Tek-made	B394 forsterite	B	.125	Ground Flat
2.000	1.750	.020	204-0127-00	Each		CR	Tek-made	Lithium Niobate			
2.320	.630	.040	204-0541-00	Each	.466	CR	Tek-made	96% Alumina	A	.100	
2.320	.720	.040	204-0462-01	Each	.120	CR	Tek-made	96% Alumina	A	.100	
2.600	1.525	.060	204-0460-00	Each	.767	CS	Tek-made	96% Alumina	A	.100	10 Holes .062 on Edge
2.900	.975	.040	204-0778-00			CR	Tek-made	96% Corundum			
3.000	3.000	.025	204-0817-00	Each	69.000	CR	Tek-made				Quartz
3.000	3.000	.025	204-0818-00	Each	67.500	CR	Tek-made				
3.000	3.000	.032	204-0702-00	Each	3.520	CR	Tek-made				
3.300	3.300	.020	204-0935-00	Each	1.140	CR	Tek-made	96% Alumina			

Tek-made substrates can be produced without tooling charges under the following conditions:

1. Same material family must be used as listed in Standard Base Material Table below.
2. Do not exceed maximum thickness listed.
3. Length and width remain same as existing part number.
4. New part numbers need to be assigned.

BASE MATERIAL TABLE

Tek-made Materials	Description	Material Family
252-0115-00	Porcelain, 85% Alumina, White	A
252-0115-01	Porcelain, 85% Alumina, Pink	A
252-0115-02	Porcelain, 85% Alumina, Green	A
252-0115-03	Porcelain, 85% Alumina, Black	A
252-0115-04	Porcelain, 85% Alumina, White	A
252-0168-00	Porcelain, 96% Alumina, White	A
252-0108-00	Porcelain, Steatite P101	B
252-0109-00	Porcelain, Alumina P103A-0	B
252-0109-01	Porcelain, Alumina P103-1	B
252-0109-02	Porcelain, Alumina P103A-0	B
252-0121-02	Forsterite, B3-94	B
252-0121-03	Forsterite, B3-91, Pink	B
252-0121-04	Forsterite, B3-98, Blue	B
252-0121-05	Forsterite, B100, Cream	B
252-0726-00	Forsterite, X-ray Attenuating	B
252-0726-01	Forsterite, X-ray Attenuating	B

Note: If you do not find what you need, call HCM Materials and Components Engineering:
Gene French, 627-4134, or John Di Lazzaro, 627-3972

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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MATERIALS CATALOG 3

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TAPE, PRESSURE SENSITIVE, ADHESIVE

Dimensions (Inch)		Material	Remarks	Part Number	Unit of Measure	Codes ^a	
Thickness	Width					Cost	ST
.0005	.357	Black Paper Mylar	Permacel #P236	253-0243-00	Foot	.012	CR
.001	.375	White Polyester Film	3M #55	253-0076-00	Foot	.021	CR
.001	.437	White Polyester Film	3M #55	253-0077-00			OB
.001	.500	Polyester	Permacel #252 PDS	253-0019-00	Foot	.013	CR
.001	.500	Nylon (Polyamide)	Mystik Kapton or Equivalent, Pkg in 36-yard Roll	253-0145-00	Roll	10.710	CR
.001	.500	Nylon (Polyamide)	Mystik Kapton or Equivalent	253-0145-01	Each	.012	OT
.001	.625		Permacel #2650, Pkg in 81-foot Roll	006-3436-00	Roll	7.700	CR
.001	.687	Polyester	Permacel #252	253-0065-00	Foot	.025	CR
.001	.750	Nylon (Polyamide)	Mystik Kapton, Pkg in 36-yard Roll	253-0144-00	Roll	16.080	CR
.001	1.000	Nylon (Polyamide)	Mystik Kapton, Pkg in 36-yard Roll	253-0143-00	Roll	14.510	CR
.001	1.000	Polyester	3M #74, Yellow	253-0228-00			DL
.001	20.000	Polyester, Printable w/matte Silver		253-0030-00	Sq Inch	.002	CR
.0012	.500	Print Cloth	Permacel #P600	006-0674-00			OB
.0012	.750	Print Cloth	Permacel #P600, Pkg in 60-yard Roll	006-0675-00	Roll	4.330	CS
.002	.096	Polyester	Brady B-123	253-0087-00	Foot	.017	CR
.002	.250	Mylar (With Reflective Silver Coating)		253-0187-00	Foot	.107	CS
.002	.750	Adhesive, Double Sided	3MX-1140	253-0079-00	Foot	.036	CR
.002	.750	Teflon Film, Transparent	Temp-R-Tape Operating Temp -100° to 400°C	253-0039-00			OB
.002	.750	Teflon Film	3M 5490/5491 Operating Temp -65° to 400°F	253-0315-00			OB
.002	1.250	Silicone Rubber		253-0136-00			OB
.002	1.875	Asbestos Paper/Polyester	CFAM - 31	253-0102-00			DL
.002	2.000	Asbestos Paper/Polyester	CFAM - 31	253-0090-00			OB
.002	2.250	Asbestos Paper/Polyester		253-0107-00			OB
.002	3.000	Asbestos Paper/Polyester	CFAM - 31	253-0118-00			OB
.002	12.000	Isotac Acrylic		253-0299-01	Sq Inch	.046	PP
.002	12.000	Isotac Acrylic	3M Y-9460, Pkg in 60-yard Rolls	253-0334-00	Each	.460	CR
.0023	.062	Polyester Film		253-0281-00			DL
.0023	.250	Polyester Film	Mystik 7300, White	253-0115-00	Foot	.014	CR
.0025	.130	Polyester	Brady B-123	253-0086-00	Foot	.037	CR
.0025	.150	Polyester Film	3M #56, Yellow	253-0191-00			DL
.0025	.188	Polyester Film	3M #56, Yellow	253-0151-00	Foot	.006	CR
.0025	.250	Polyester Film	3M #59	253-0049-00			OB
.0025	.250	Polyester Film	3M #56	253-0021-00	Foot	.011	CR
.0025	.300	Polyester Film	3M #56	253-0304-00			DL
.0025	.328	Polyester Film	3M #56, Yellow	253-0084-00			DL
.0025	.375	Polyester Film	3M #56, Yellow	253-0125-00	Foot	.009	CR
.0025	.375	Polyester Film	Scotch #59	253-0055-00	Roll	1.830	CS
.0025	.437	Polyimide Film	3M	253-0297-00			DL
.0025	.437	Polyester Film	3M #56, Yellow	253-0103-00	Foot	.016	CR
.0025	.500	Polyester Film	Permacel #253	253-0018-00			OB
.0025	.500	Polyester Film	Scotch #59	253-0047-00	Foot	.128	CR
.0025	.625	Polyester Film	Permacel P-231	253-0298-00			DL
.0025	.750	Polyester Film	3M #56, Yellow	253-0196-00			DL
.0025	.812	Polyester Film	3M #56, Yellow	253-0175-00	Foot	.019	CS
.0025	.875	Polyester Film, Thermosetting	3M/Permacel, Yellow	253-0329-00			DL
.0025	1.000	Polyester Film	3M #56, Yellow	253-0091-00	Foot	.038	CR
.0025	1.000	Polyester	Scotch #5 Electrical Tape	253-0140-00	Foot	.026	CR
.0025	1.062	Polyester Film	3M #56, Yellow	253-0240-00			DL
.0025	1.125	Polyester Film	3M #56, Yellow	253-0229-00			DL
.0025	1.250	Polyester Film	3M #56, Yellow	253-0227-00			DL
.0025	1.375	Polyester Film	3M #56, Yellow	253-0054-00			DL
.0025	2.000	Polyester Film	Scotch #59	253-0063-00			OB
.003	.094	Polyester	Mystik 7300	253-0119-00			DL
.003	.180	Polyester	Mystik 7300	253-0060-00			DL
.003	.220	Polyester	Mystik 7300	253-0104-00			DL

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TAPE, PRESSURE SENSITIVE, ADHESIVE (cont)

Dimensions (Inch)		Material	Remarks	Part Number	Unit of Measure	Codes ^a	
Thickness	Width					Cost	ST
.003	.375	Teflon	3M#63	253-0032-00	Foot	.096	CR
.003	.875	Polyimide	Hi-Temp Silicone Adhesive/80° Range Temperature, P221	253-0202-00	Foot	.165	CS
.003	1.000	Neoprene Foam, Acrylic	3M 4962, Pkg in 72-yard Rolls	253-0336-00	Foot	.172	CR
.0035	.150	Teflon	3M #60	253-0088-00	Foot	.060	CR
.0035	.200	Polyester Film w/Rubber Resin	Permaceal P-257, Double Sided Adhesive	253-0305-00			DL
.0035	.250	Polyester Film	3M #75 Double Sided Adhesive	253-0221-00	Foot	.023	CS
.0035	.375	Polyester Film	3M #75 Double Sided Adhesive	253-0219-00	Inch	.003	CR
.0035	.438	Polyester Film	3M #75 Double Sided Adhesive	253-0234-00			DL
.0035	.500	Polyester Film	3M #75 Double Sided Adhesive	253-0174-00	Foot	.060	CR
.0035	.563	Polyester Film	3M #75 Double Sided Adhesive	253-0255-00			DL
.0035	.750	Polyester Film	3M #75 Double Sided Adhesive	253-0197-00	Foot	.071	CR
.0035	.813	Polyester Film	3M #75 Double Sided Adhesive	253-0254-00			DL
.0035	.875	Polyester Film w/Rubber Resin, Thermosetting	3M /Permaceal, Double Sided Adhesive	253-0331-00			DL
.0035	1.000	Teflon	Permaceal P423, Natural	253-0142-00			DL
.0035	1.000	Polyester Film	3M #75 Double Sided Adhesive	253-0161-00	Foot	.080	CR
.0035	1.250	Polyester Film	3M #75 Double Sided Adhesive or Permaceal #P-257	253-0274-00			DL
.005	.1875	Polyester	Polyken #765 or Equivalent	253-0279-00	Foot	.013	CR
.005	.250	Polyester		253-0182-00			DL
.005	.312	Polyester	Polyken #765 or Equivalent	253-0138-00			DL
.005	.375	Polyester	Polyken #765 or Equivalent	253-0157-00	Foot	.018	CR
.005	.375	Polyester Web	3M #44, Pkg in 90-yard Rolls	253-0309-00			DL
.005	.375	Vinyl	3M #471 or Equivalent	253-0204-00	Foot	.120	CR
.005	.500	Polyester Web	3M #44 or Equivalent	253-0284-00	Foot	.015	CR
.005	.625	Polyester	3M	253-0291-00	Foot	.028	CS
.005	.750	Vinyl	3M #471 or Equivalent	253-0131-00	Foot	.039	CR
.005	.750	Polyester Film	3M #44	253-0292-00			DL
.005	1.000	Paper	3M#10	253-0283-00			OB
.005	1.125	Polyester Web, Rubber Base	3M #44	253-0379-00			DL
.005	12.000	Si Coated Paper Liner/Acrylic Polymer	3M Y-9469	253-0299-00	Foot	.694	CR
.005	24.000	Si Coated Paper Liner/Acrylic Polymer	94469	253-0259-00	Foot	1.036	OT
.0055	.250	Reinforced Epoxy Film, Thermosetting Acrylic, White	3M #20	253-0372-00			DL
.0055	.375	Reinforced Epoxy Film, Thermosetting Acrylic, White	3M #20	253-0373-00			DL
.0055	.500	Reinforced Epoxy Film, Thermosetting Acrylic, White	3M #20	253-0375-00			DL
.0055	.500	Paper	Permaceal #275 or Equivalent	253-0206-00			DL
.0055	1.438	Paper	Permaceal #275 or Equivalent	253-0212-00	Foot	.043	CR
.006	.250	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0207-00			DL
.006	.500	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0205-00			DL
.006	.625	Polyester Film/Paper	Permaceal #246 or Equivalent	253-0217-00			DL
.006	.750	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0237-00			DL
.006	.750	Creped Paper	Mystik 6215, Pkg in 60-yard Roll	006-0683-00	Roll	.410	CR
.006	.875	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0232-00	Foot	.048	CR
.006	1.000	Polyester Film/Paper	Permaceal #248	253-0293-00			DL
.006	1.062	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0230-00			DL
.006	1.156	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0238-00	Foot	.036	CR
.006	1.188	Polyester/Glass Filament	Permaceal P246, Pkg in 60-yard Rolls	253-0269-00			DL
.006	1.250	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0246-00			DL
.006	1.375	Polyester/Glass Filament	Permaceal P246, Pkg in 60-yard Rolls	253-0268-00			DL
.006	1.375	Tan Polyester Film/Paper	Permaceal #P248	253-0280-00			DL
.006	1.438	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0211-00	Foot	.040	CR
.006	1.656	Polyester Film/Paper	Permaceal #248 or Equivalent	253-0239-00	Foot	.052	CR
.006	2.000	Creped Paper	Mystik 6215	006-0684-00	Roll	1.110	CR

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TAPE, PRESSURE SENSITIVE, ADHESIVE (cont)

Dimensions (Inch)		Material	Remarks	Part Number	Unit of Measure	Codes ^a	
Thickness	Width					Cost	ST
.006	2.000	Impregnated Rope	Permacel #72	006-0687-00			DL
.0065	.250	Paper Masking, High Temperature	Permacel #703	006-0682-00			DL
.0065	.500	Rope Stock Paper	Mystik #6325, Pkg in 60-yard Roll	006-0116-00	Roll	.330	CR
.0065	.500	Paper Masking, High Temperature	Permacel #702	006-0685-00			DL
.0065	.750	Paper Masking, High Temperature	Permacel #703	006-0314-00	Roll	4.100	CS
.0065	1.000	Paper Masking, High Temperature	Permacel #703	006-1069-00			DL
.0065	1.000	Paper Masking, High Temperature	Permacel #703	006-1069-01	Roll	2.290	CR
.0065	2.000	Paper Masking, High Temperature	Permacel #703	006-1863-00			DL
.007	.500	White Glass Cloth	Permacel #21	253-0013-00			DL
.007	.750	Fiberglass	Permacel P-21, Insulating	253-0078-00			DL
.007	.875	Acetate Film w/Glass Filament	3M #46 or Equivalent	253-0149-01			DL
.007	1.000	Vinyl, Clear	Permacel P-29/3M #471	253-0371-00	Foot	.037	CR
.007	1.125	Acetate Film w/Glass Filament	3M #46 or Equivalent	253-0149-00	Foot	.054	CR
.007	3.000	Glass Cloth	Permacel #213	253-0199-00	Foot	.154	CR
.0075	1.437	Glass Cloth	3M #79	253-0303-00			DL
.0075	1.500	Glass Cloth	Permacel #213	253-0241-00			DL
.008	.005	White Acetate Cloth	Permacel #24	253-0015-00			DL
.008	.250	White Glass Cloth	3M #27	253-0071-00	Foot	.016	CR
.008	.250	White Acetate Cloth	3M #28	253-0171-00			DL
.008	.312	White Acetate Cloth	3M #28	253-0216-00			DL
.008	.375	White Acetate Cloth	3M #28	253-0179-00			DL
.008	.438	White Acetate Cloth	3M #28/Permacel #24	253-0343-00			DL
.008	.562	White Polyester Film	3M #55, Pkg in 216-inch Roll	253-0072-00	Roll	3.780	CR
.008	.687	White Polyester Film	3M #55	253-0059-00	Foot	.017	CR
.008	.781	White Polyester Film	3M #55	253-0066-00			OB
.008	1.000	Black Acetate Cloth	3M #11	253-0062-00			DL
.008	1.375	White Acetate Cloth	Permacel #24	253-0210-00			DL
.008	1.500	Black Acetate Cloth	3M #11	253-0201-00			DL
.008	2.750	Teflon	Permacel #422	253-0189-00	Roll	78.160	OT
.0085	.250	Black Acetate Cloth	3M #11	253-0126-00	Foot	.013	CR
.0085	.375	Black Acetate Cloth	3M #11 or Equivalent	253-0117-00	Foot	.017	CR
.0085	.594	Black Acetate Cloth	3M #11 or Equivalent	253-0130-00	Foot	.031	CR
.0085	.812	Black Acetate Cloth	3M #11 or Equivalent	253-0070-00	Foot	.046	CR
.0085	1.218	Black Acetate Cloth	3M #11	253-0051-00			DL
.0085	1.250	Black Acetate Cloth	3M #11 or Equivalent	253-0116-00	Foot	.071	CR
.0085	1.500	Black Acetate Cloth	3M #11	253-0064-00	Foot	.072	CR
.0095	3.000	Waterproofed Polyethylene Coated Cloth	Permacel #P670, Pkg in 60-yard Roll	006-1799-00	Roll	4.870	CR
.010	.125	Vinyl Covered Cloth	Mystik 5863	253-0120-00			DL
.010	.500	Nylon Paper	Nome M Type E-58	253-0152-00			DL
.010	.625	Nylon Paper	Nome M Type E-58	253-0185-00			DL
.010	.750	Vinyl Film	Permacel P30-105	253-0236-00			DL
.010	.750	A-10 Isotac (Acrylic, Clear)	3M Y-9473	253-0376-00			DL
.020	1.250	Rubber, Red	Permacel #P2650	253-0137-00	Foot	.578	CR
.027	1.000	Acrylic Foam	3M YH930	253-0374-00	Inch	.024	CR
.062	.166	Silicone Sponge	Cohrlastic, Adhesive One Side	253-0253-00	Foot	.240	CR
.062	.250	Polyurethane Sponge	3M #4116	253-0160-00	Foot	.082	CR
.062	.375	Open Cell Polyurethane	3M #4016 Double Sided Adhesive, Pkg in 36-yard Roll	253-0218-00	Roll	4.400	CS
.062	.375	Polyurethane Sponge	3M #4116	253-0192-00	Roll	9.300	CR
.062	.500	Silicone Sponge Rubber		253-0198-00	Foot	.590	CR
.062	.500	Vinyl Foam	Double Sided Adhesive	253-0176-00	Each	.034	CR
.062	.500	Vinyl Foam, Double Sided	3M	253-0135-00	Foot	.053	CR
.062	.500	Vinyl Foam, Double Sided	3M	253-0135-01	Each	.004	CR
.062	.750	Polyurethane Sponge	3M #4116	253-0056-00	Foot	.150	CR
.062	1.500	Polyurethane Sponge	3M #4116	253-0184-00	Inch	.026	CR

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TAPE, PRESSURE SENSITIVE, ADHESIVE (cont)

Dimensions (Inch)		Material	Remarks	Part Number	Unit of Measure	Codes ^a	
Thickness	Width					Cost	ST
.0625	1.000	Open Cell Urethane Foam	Acrylic Adhesive, Pkg in 36-yard Roll	253-0398-00	Inch	.025	CR
.093	8.700	Foam		252-0640-00	Each	.490	CR
.094	.500	Silicone Sponge Foam	CHR-R-10470, Adhesive One Side	252-0635-00	Inch	.040	CR
.125	.125	Silicone Sponge	Dark Blue-Gray	348-0524-00	Each	.935	CR
.125	.250	Foam	.250 Diameter Dots, Adhesive Both Sides	253-0154-00	Each	.024	CR
.125	.250	Foam	Wilshire V-7, Pkg in 50-foot Roll	253-0153-00	Foot	.140	CR
.125	.250	Urethane Foam	Gray, with Adhesive One Side	252-0603-00	Foot	.022	CR
.125	.375	Silicone Sponge Foam	CHR-R-10470	253-0248-00			DL
.125	.500	Polyurethane Foam	Permaceel #PJ25F	255-0569-00	Roll	6.660	CR
.125	.500	Polyurethane Foam	Adhesive One Side	255-0647-00	Foot	.156	CR
.125	.750	Urethane Foam	3M #4008, Pkg in 36-yard Roll	253-0188-00	Roll	18.360	CR
.125	4.000	Urethane Foam, Black		253-0083-00	Foot	.312	CR
.156	.375	Foam	Dutch Brand DV3719	253-0164-00			OB
.188	.250	Foam	Poron 4701-01, Pkg in 36-inch Rolls	253-0392-00	Each	2.200	CR
.188	.600	Foam	Poron 4701-01, Pkg in 40-inch Rolls	253-0393-00	Each	.884	PP
.250	.250	Urethane Foam		252-0651-00	Foot	.059	CR
.250	.250	Urethane Foam	Tesamoll #2	253-0095-00			OB
.250	.375	Urethane Foam, Gray		253-0045-00	Foot	.117	CR
.250	.500	Foam	Tesamoll, Gray	253-0320-00	Foot	.120	CR
.250	.500	Polyurethane		253-0101-00			DL
.250	.750	Urethane Foam, Black	Tesamoll #3	253-0028-00	Inch	.042	CR
.250	10.000	Adhesive, Double Sided	3M #465	253-0052-00	Foot	.356	CR
.300	.300	Epoxy Film	3M #10	253-0277-00			OB
.375	2.000	Foam	UL Approved	253-0249-00			OB
.500	.375	Urethane Foam, Black	Tesamoll #2	253-0044-00	Inch	.010	CR
.500	.625	Adhesive, Double Sided	3M #468	255-0576-00			DL
.250	.250	Adhesive, Double Sided	3M #465	253-0075-00	Foot	.013	CR
.250	.250	Aluminum Backing	Mystik #7402	253-0132-00	Foot	.039	CR
.375	.375	Epoxy Coated Polyester Web	3M X1277 or Equivalent	253-0190-00			DL
.500	.500	Acrylic, Double Coated Adhesive		253-0344-00	Roll	58.790	CR
.500	.500	Polyethylene, Release Surface		253-0345-00	Foot	.479	CR
.625	.625	Velcro Loop, Black		252-0696-00			OB
.750	.750	Electropl Vinyl, Yellow		006-1039-00			DL
1.000	1.000	Velcro Loop, Beige		252-0697-00			OB
1.000	1.000	Velcro Hook, Black (Mates w/253-0273-00)	3M SJ-3536, Pkg in 6-inch Pieces	253-0272-00	Each	.408	CR
1.000	1.000	Velcro Loop, Black (Mates w/253-0272-00)	3M SJ-3537, Pkg in 6-inch Pieces	253-0273-00	Each	.408	CR
1.000	1.000	Velcro Hook (Mates w/252-0684-00)		252-0683-00	Foot	.394	CR
1.000	1.000	Velcro Loop (Mates w/252-0683-00)		252-0684-00	Foot	.336	CR
1.000	1.000	Polyolefin w/Synthetic Rubber Adhesive	3M-SJ3541, Type 400	253-0386-00	Foot	.699	CR
1.000	1.000	Polyolefin w/Synthetic Rubber Adhesive	3M-SJ3542, Type 170	253-0387-00	Foot	.699	CR
1.500	1.500	Polyester/Glass Filament	Permaceel P24	253-0270-00	Foot	.069	CR

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TAPE, PRESSURE SENSITIVE, ADHESIVE (cont)

ELECTROLYTIC COPPER FOIL

Dimensions (Inch)		Material	Remarks	Part Number	Unit of Measure	Codes ^a	
Thickness	Width					Cost	ST
.0007	.750	Tefco T-25F		253-0220-00			DL
.0007	1.594	Fralock, Alloy 110	6 Strips on 12-inch Mylar	253-0316-00			DL
.0010	1.250	Tru-Tek	7 Strips on 12 Inch Mylar	253-0165-00			DL
.0010	1.625	Tru-Tek	6 Strips on 12 Inch Mylar	253-0166-00			DL
.0014	.170	3M #1194/Permacel P-389	Packaged in 36-yard Rolls	253-0367-00			DL
.0014	.200	3M #1194/Permacel P-389	Packaged in 36-yard Rolls	253-0366-00			DL
.0014	.250	3M #1194/Permacel P-389	Packaged in 36-yard Rolls	253-0364-00			DL
.0014	.281	Permacel P-389	Packaged in 36-yard Rolls	253-0214-00			DL
.0014	.344	3M #1194/Permacel P-389	Packaged in 36-yard Rolls	253-0365-00			DL
.0014	.375	Permacel P-389	Packaged in 36-yard Rolls	253-0017-00			DL
.0014	.531	3M #1194/Permacel P-389	Packaged in 36-yard Rolls	253-0358-00			DL
.0014	.562	Permacel P-389	Packaged in 36-yard Rolls	253-0264-00			DL
.0014	.937	Permacel EE-3990	Packaged in 36-yard Rolls	253-0128-00			OB
.0014	1.125	3M #1194/Permacel P-389	Packaged in 36-yard Rolls	253-0357-00			DL
.0014	1.250	Permacel EE-3990	Packaged in 36-yard Rolls	253-0074-00	Foot	.244	CR
.0014	1.594	Permacel P-389	Packaged in 36-yard Rolls	253-0317-00			DL
.0014	1.625	Permacel EE-3990	Packaged in 60-yard Rolls	253-0093-00	Foot	.258	CR
.0014	1.750	Permacel EE-3990	Packaged in 36-yard Rolls	253-0033-00	Foot	.280	CR
.0014	2.000	Permacel EE-3990	Packaged in 36-yard Rolls	253-0023-00			DL
.0014	2.750	Permacel EE-3990	Packaged in 36-yard Rolls	253-0024-00	Foot	.470	CR
.0016	.500	Permacel 389	Packaged in 36-yard Rolls	253-0247-00	Foot	.122	CR
.0016	.625	Permacel 389	Packaged in 60-yard Rolls	253-0245-00	Foot	.122	CR
.0016	.750	3M 1194	Packaged in 25-yard Rolls	253-0266-00			DL
.0016	.875	Permacel 389	Packaged in 36-yard Rolls	253-0244-00			DL
.0016	1.062	Permacel 389	Packaged in 36-yard Rolls	253-0251-00	Foot	.199	CR
.0016	1.375	Permacel 389	Packaged in 36-yard Rolls	253-0257-00			DL
.0016	2.312	Permacel EE-3990	Packaged in 36-yard Rolls	253-0226-00			DL
.004	.3125	Permacel or 3M	Packaged in 36-yard Rolls	253-0296-00			DL
.004	2.625	Permacel 389	Packaged in 36-yard Rolls	253-0262-00			DL
.005	.297	Alloy 110	Packaged in 25-yard Rolls	253-0312-00			DL
.005	.375	Fralock/Tru-Tek	Packaged in 25-yard Rolls	253-0288-00			DL
.005	.375	Alloy 110	Packaged in 72-yard Rolls	253-0325-00			DL
.005	.500	Alloy 110	Packaged in 72-yard Rolls	253-0311-00			DL
.005	.625	Fralock, Alloy 110	Packaged in 50-yard Rolls	253-0337-00			DL
.005	.625		Packaged in 36-yard Rolls	253-0369-00	Foot	.280	CR
.005	.690	Fralock/Tru-Tek	Packaged in 25-yard Rolls	253-0289-00			DL
.005	.750	Fralock	Packaged in 25-yard Rolls	253-0294-00			DL
.005	.750	Alloy 110	Packaged in 72-yard Rolls	253-0314-00			DL
.005	.875	Fralock	Packaged in 25-yard Rolls	253-0300-00			DL
.005	.875	Alloy 110	Packaged in 75-yard Rolls	253-0313-00			DL
.005	1.125	Alloy 110	Packaged in 72-yard Rolls	253-0346-00			DL
.005	1.281	Fralock/Tru-Tek T-0502	Packaged in 25-yard Rolls	253-0282-00			OB
.005	1.359	Fralock	Packaged in 72-yard Rolls	253-0301-00			DL
.005	1.375	Fralock, Alloy 110	Packaged in 36-yard Rolls	253-0324-00			DL
.005	1.500	Alloy 110	Packaged in 72-yard Rolls	253-0301-01			DL
.005	1.594	Fralock T-35, Alloy 110	Packaged in 25-yard Rolls	253-0318-00			DL
.005	1.625	Fralock	Packaged in 25-yard Rolls	253-0295-00			DL
.005	1.938	Fralock/Permacel P-389		253-0368-00			DL
.005	2.000	Fralock	Packaged in 25-yard Rolls	253-0302-00			DL
.005	2.312	Fralock/Tru-Tek	Packaged in 25-yard Rolls	253-0290-00			DL

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TAPE, PRESSURE SENSITIVE, ADHESIVE (cont)

ELECTROLYTIC ALUMINUM FOIL

Dimensions (Inch)		Material	Remarks	Part Number	Unit of Measure	Codes ^a	
Thickness	Width					Cost	ST
.004	1.000	Scotch 1170 Scotch X-1170 Scotch X-1170 Scotch X-1170	Resistance Through Tape .01 Ω /Square Inch	253-0396-00	Inch	.004	PP
.055	.500			253-0155-00	Foot	.240	CR
.0055	.750		Resistance Through Tape .1 Ω /Square Inch	253-0225-00	Roll	19.440	CS
.0055	1.500		Resistance Through Tape .1 Ω /Square Inch	253-0224-00	Inch	.032	CS
	1.000			253-0148-00	Foot		OB

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ADHESIVES

Type/Name	Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Ablebond 71-2	#2 Tube	Ablestick Laboratories	006-2971-00	Jar	85.400	CR
Ablebond 163-4		Ablestick Laboratories	006-3411-00			DL
Ablebond 877-L		877-1	006-2570-00	Each	3.836	CR
Acrylic		Zip Grip #10	006-2196-00	Tube	5.000	CR
Acrylic		Zip Grip #10	006-2196-01	Tube	1.950	CR
Acrylic	3.500 Ounces	Thermalloy 480	252-0305-00	Pack	14.560	CR
Bond		Bond #5032	006-0533-00			DL
Contact Cement		Permabond White Label	006-1685-00	Bottle	.742	CR
Contact Cement		Permabond Blue Label	006-2313-00			DL
Contact Cement		3M #EC-847	006-0367-00			DL
Contact Cement	Quick Drying		006-4379-00			DL
Contact Cement		3M #EC-847	006-0367-01	Tube	3.060	CR
Contact Cement		Casco Borden's S0-33	006-1178-00	Gallon	8.370	CS
Contact Cement		Permabond Yellow Label	006-2314-00	Bottle	7.090	CR
Duco Household			006-0532-00	Tube	.850	CR
Ecconobond #281	84-1 LMIT Epoxy DIE Silver Polyimide, Elec Conductive 7-gram Syringe	Emerson & Cuming	006-3164-00			DL
Epoxy		Epolite 6400	252-0387-00	Gram	.041	EN
Epoxy			252-0746-00			EN
Epoxy			256-0030-00	Ounce	46.370	CR
Epoxy			006-6697-00	Gram	2.663	CR
Epoxy	Clear	#2114	006-7210-00	Each	1.330	EN
Epoxy		Conap AD-3	252-0276-00			DL
Epoxy Kit		Hysol #1C	006-0217-00	Each	3.250	CR
Epoxy Kit		Hysol #11-C	006-4401-00	Each	2.750	CS
Epoxy Kit		Hysol #0151	006-4402-00	Each	3.500	CS
Epoxy Kit	Clear, Quick Set Gray, Super Quick Set	Hysol #6008	006-4403-00	Each	5.150	CR
Epoxy Kit		Hysol #309	006-4404-00	Each	5.150	CS
Epoxy, 2 Part		Woodhill EPX-1C	252-0200-00	Each	1.310	CS
Epoxy, 2 Part, Thixotropic		Eccobond #285	006-1757-00	Each	33.500	CR
Epoxy, Thixotropic		Atacs Products D-276	252-0731-00			DL
Glue, Elmers	Black		006-4381-00			DL
Loctite		222	006-7232-00	Gram	.032	PP
Loctite		#38050	006-6862-00	Each	9.650	CR
Loctite #403		Prism #40340	006-7244-00			CR
Loctite		Electrical Specialty #325-55	006-2954-00	Tube	7.940	CS
Loctite	Fast Setting	Superbond #04E	006-2366-00	Tube	1.870	CR
Loctite		Screw Lock #222-21	006-2517-00	Bottle	4.040	CR
Loctite		Thread Lock #290-31	006-2579-00	Each	10.410	CR
Loctite		#414-50 SuperBonder	006-2712-00	Bottle	8.090	CR
Loctite		Loctite 00216	006-4466-00	Each	11.020	CR
Loctite	Cyanocrylate, Ester Based					
Loctite Activator		Loctite 00216	006-4466-01			OB
Loctite Super		Loctite 707	006-6609-00	Ounce	.842	CR
Paste		414	006-7035-00	Each		PP
Paste		AVX Materials, AVX 3525	256-0696-00			DL
Paste	Mixed Bonded Gold (85% Solids)	Electro Material Corp. of America, #9121	256-0698-00	Gram	1.570	CR
Paste	Electrode Abrasive Saline Gel Dielectric	Day-Baldwin, Inc.	006-1098-00			OB
Paste		ESL 4114	256-0058-00			CR
Paste, Conductive		3345AG	256-0691-00	Gram	1.200	CR
Paste, Conductive		9990	256-0690-00	Gram	.700	CR
Paste, Conductive		Ablestick Laboratories	006-3638-00			NP
Paste, Conductive	Platinum/Gold	5835	256-0666-00	Gram	21.128	CR
Paste, Conductive		Owens-Corning 6985	256-0640-00	Gram	20.200	CR
Paste, Conductive		DP9791	256-0023-00	Gram	27.795	CR
Paste, Conductive		7185	256-0025-00	Gram	19.175	CR
Paste, Conductive		LP-50-2296	256-0615-00	Gram	19.710	CR

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ADHESIVES (cont)

Type/Name	Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost	ST
Paste, Conductive	Gold, DP5175, Thick Film Tungsten Metal Refractory Metal Palladium, Platinum & Silver Thermally Sensitive	Electro Oxide Corp. 7185	256-0693-00	Gram	23.616	CR
Paste, Conductive			256-0060-00	Gram	.076	CR
Paste, Conductive		Dupont D4093 Thick Film Systems	256-0688-00			NP
Paste, Conductive			256-0694-00	Gram	3.800	CR
Paste, Resistor			256-0697-00	Gram	3.890	CR
Paste, Resistive		DP9319 9679	256-0036-00	Gram	6.739	CR
Paste, Resistive			256-0038-00	Gram	5.460	EN
Paste, Resistive			256-0653-00	Gram	5.177	CR
Paste, Resistive			256-0654-00	Gram	4.510	CR
Paste, Resistive			256-0655-00	Gram	4.381	CR
Paste, Resistive	Dielectric Multicore 85% Metal, 15% RMA Flex Weldwood	Dupont DP9841 Dupont DP8922 Indium IPN-80913 COMP SN62 All Purpose Spray	256-0656-00	Gram	5.300	CR
Paste, Solder			256-0664-00	Gram	.890	CR
Paste, Solder			256-0665-00	Gram	.147	CR
Paste, Solder			256-0701-00			DL
Plastic Resin			006-2458-00			DL
Silicone	Clear RTV Clear Silver PI Copper, 2-ounce	Dow Corning	253-0390-00			PP
Silicone			006-4395-00	Each	9.550	CR
Silicone			252-0370-00	Ounce	35.640	CR
Silicone Rubber		Chromerics 50-02-1030-000 Dow Corning TRV #3145	006-3217-00			DL
Silicone Rubber			252-0174-00			OB
Silicone Rubber	3 Ounces Flame Retardant	GE RTV-116 Red GE RTV-133 Black 3M #2262	252-0682-00	Each	2.860	CS
Silicone Rubber			252-0718-00	Each	17.900	CR
Vinyl	Clear	Spectra Strip Stabond W-600	252-0156-00			DL
Vinyl, Vyna-Kote			252-0029-00			DL
			252-0095-00	Gallon	8.900	CR
			252-0116-00			DL
		Chemlock 607				

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GASSES

Type or Mix	Other	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
Acetylene	#5, 250 Cubic Feet	006-5979-00	Cylinder	26.1100	CR
Acetylene	#4, 125 Cubic Feet	006-5980-00	Cylinder	16.480	CR
Acetylene	#3, 75 Cubic Feet	006-5981-00	Cylinder	8.390	CR
Acetylene	B-40	006-5983-00	Cylinder	6.960	CR
Acetylene	MC10	006-5984-00	Cylinder	4.640	CR
Air, Compressed	224 Cubic Feet	006-5977-00	Cylinder	13.470	CR
Anhydrous Ammonia	#150	006-0464-00	Cylinder	69.000	CR
Argon	Grade 5, 200 Cubic Feet	006-7194-00	Cylinder	88.000	CR
Argon	Grade 5, 200 Cubic Feet	006-7106-00	Cylinder	88.000	CR
Argon	7 x Lecture Bottle w/GCA 580 Valve	006-6211-00	Cylinder	36.000	CR
Argon, Pure	330 Cubic Feet	006-5916-00	Cylinder	20.510	CR
Argon, Liquid	4300 Cubic Feet	006-5961-00			DL
Argon, 5% Hydrogen	200 Cubic Feet	006-6260-00	Cylinder	67.870	CR
Argon, 5% Methane	200 Cubic Feet	006-6981-00			DL
Argon, 5% Phosphene	80 Cubic Feet	006-6786-00	Cylinder	136.800	CR
Arsine, 15% in Hydrogen		006-3149-00	Cylinder	111.150	CR
Arsine, 70 ppm, in Hydrogen	Size 1D Cylinder	006-1864-00	Cylinder	110.200	CR
Boron Trichloride		006-3639-00	Cylinder	50.000	CR
Boron Trifluoride		006-7076-00	Cylinder	101.600	CR
Carbon Dioxide	5016 Cubic Feet	006-5976-00	Cylinder	11.020	CR
Carbon Dioxide	Grade 4, 200 Cubic Feet	006-6868-00	Cylinder	47.500	CR
Freon		006-3640-00	Gallon	13.860	CR
Helium	285 Cubic Feet	006-5974-00	Cylinder	34.750	CR
Helium	Grade 5, 200 Cubic Feet	006-6982-00	Cylinder	92.700	CR
Helium	32, Grade 4.5, 580 Cubic Feet	006-6766-00	Cylinder	28.840	CR
Helium	100-C GA.580	006-7095-00	Cylinder	15.000	CR
Helium, Ultra High Purity		006-3493-00			DL
Helium, 40% Hydrogen	0 Grade	006-6010-00	Cylinder	85.500	CR
Hydrogen	Grade 5, 200 Cubic Feet	006-7181-00	Cylinder	79.550	CR
Hydrogen	80 Cubic Feet	006-5969-00 ^b	Cylinder	4.760	CR
Hydrogen	97 Cubic Feet	006-6172-00			DL
Hydrogen	194 Cubic Feet	006-5967-00	Cylinder	14.700	CR
Hydrogen Chloride, 100%	1A	006-2932-00			DL
Hydrogen, 15% ASH3 Arsine, 4X		006-6504-00	Cylinder	104.160	CR
Nitrogen	40 Cubic Feet	006-5915-00 ^b	Cylinder	1.970	CR
Nitrogen	60 Cubic Feet	006-5914-00 ^b	Cylinder	1.970	CR
Nitrogen	112 Cubic Feet	006-5913-00	Cylinder	7.610	CR
Nitrogen	224 Cubic Feet	006-5910-00	Cylinder	9.140	CR
Nitrogen, Purified	224 Cubic Feet	006-5911-00	Cylinder	9.710	CR
Nitrogen, UltraPure	200 Cubic Feet	006-5912-00	Cylinder	90.520	CR
Nitrogen, 10% in Hydrogen	206 Cubic Feet	006-5970-00	Cylinder	17.510	CR
Nitrogen, 15% in Hydrogen	224 Cubic Feet	006-5971-00	Cylinder	18.550	CR
Nitrogen, 40% in Hydrogen	224 Cubic Feet	006-5972-00	Cylinder	18.550	CR
Oxygen	20 Cubic Feet	006-5908-00 ^b	Cylinder	1.740	CR
Oxygen	20 Cubic Feet	006-5909-00			DL
Oxygen	40 Cubic Feet	006-5907-00	Cylinder	1.970	CR
Oxygen	60 Cubic Feet	006-5906-00 ^b	Cylinder	1.970	CR
Oxygen	80 Cubic Feet	006-5905-00 ^b	Cylinder	2.320	CR
Oxygen	122 Cubic Feet	006-5902-00	Cylinder	7.750	CR
Oxygen	244 Cubic Feet	006-5879-00	Cylinder	9.420	CR
Oxygen	Size D, Medical	006-6023-00	Cylinder	4.000	CR
Oxygen	Grade 4.3, 200 Cubic Feet	006-6595-00	Cylinder	108.420	CR
Phosphene, 3% in Nitrogen		006-3485-00			DL
Phosphene, 1% in Nitrogen		006-2389-00			DL
Phosphene, 15% in Hydrogen		006-3148-00	Cylinder	105.450	CR

^a The nominal price (at time of printing) is listed in the cost column. The cost figures are for the gas only. There is also a cylinder rental charged on a per day basis after 30 days. For Status Codes, see tab marked CODES in the back of this catalog.

^b Tek owned.

GASSES (cont)

Type or Mix	Other	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
Silane	152 Cubic Feet	006-6605-00	Cylinder	180.000	CR
Silane	1X	006-1852-00			DL
Silane, 10% in Hydrogen	2D	006-1851-00			DL
Silane, 3% in Nitrogen	1.7 Cubic Feet	006-1866-00			DL
Silane	100% Ornitrade, Grade C.C.D.	006-6642-00	Cylinder	600.000	CR

^a The nominal price (at time of printing) is listed in the cost column. The cost figures are for the gas only. There is also a cylinder rental charged on a per day basis after 30 days. For Status Codes, see tab marked CODES in the back of this catalog.

DEHYDRATING AGENT (DESICCANT)

Material	Remarks	Part Number	Unit of Measure	Codes ^a	
				Cost	ST
Silica Gel	Metal Air Dryers (2.750 Dia x .750 Thick)	256-0570-00	Each	3.450	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

CERAMIC MOLDING MATERIAL

Description	Part Number	Unit of Measure	Codes ^a	
			Cost	ST
Lead Oxide	006-1042-00			DL
Magnesium Oxide, USP #6010 Malin KRODT	006-2414-00			DL
Sodium Sulfide, Anhydrous Reagent	006-3499-00			DL
Steatite P101 (Porcelain Compound)	252-0108-00	Pound	.135	CR
Alumina, P103A-0	252-0109-00	Pound	.319	CR
Alumina, P103-1 (Porcelain Compound)	252-0109-01	Pound	.304	CR
Alumina, P103A-O Extrusion	252-0109-02	Pound	.319	CR
Alumina, A126, White, Finished, 85%	252-0115-00	Pound	.435	CR
Alumina, Finished, 96%	252-0168-00	Pound	.374	CR
Alumina, A126, Pink	252-0115-01	Pound	.450	CR
Alumina, A126, Green	252-0115-02	Pound	.444	CR
Alumina, A126, Black	252-0115-03	Pound	.341	CR
Alumina, A126, White Extrusion	252-0115-04			DL
Barium Carbonate	256-0510-00	Pound	.455	CR
Silver Bond, 325 Mesh Silica Clay	256-0513-00	Pound	.250	CR
Tennessee #1 Ball Clay	256-0515-00	Pound	.104	CR
Kingman Feldspar	256-0517-00	Pound	.098	CR
SAF (Standard Air Flow) Florida Clay	256-0520-00	Pound	.095	CR
A-400 Nepheline Syenite	256-0523-00	Pound	.105	CR
Superpax "A"	256-0530-00	Pound	.754	CR
Snowflake (Calcium Carbonate) Whiting Fine Ground	256-0531-00	Pound	.153	CR
Zinc Oxide	256-0532-00	Pound	.660	CR
Polyfon T (Wetting Agent)	256-0549-00	Pound	.172	CR
Cobalt Carbonate	256-0551-00	Pound	10.280	CR
A-14 Aluminum Oxide	256-0554-00	Pound	.497	CR
Yellowstone Talc	256-0559-00	Pound	.139	CR
Talcron 45-26	256-0569-00	Pound	.098	CR
Carbowax 4000 (Binder)	256-0571-00	Pound	1.270	CR
Barium Titante K-4000	256-0584-00	Pound	6.300	CR
Barium Titante K-200	256-0591-00			OB
Kaiser MGO (Magnesium Oxide)	256-0593-00	Pound	.321	CR
Darvan #7 (Wetting Agent)	256-0604-00	Pound	.490	CR
Permanente #98 Perclase (Castable Ceramic Material)	256-0605-00	Pound	1.260	CR
Sodium Hexa-Meta Phosphate	256-0606-00	Pound	.860	CR
Barium Titanate K-38	256-0611-00			OB
MP-98-25 Cercron Talc	256-0613-00	Pound	.127	CR
MP-99-54 Cercron Talc	256-0614-00	Pound	.483	CR
Polyglycol P-1200	256-0617-00	Pound	1.120	CR
Marasperse (Wetting Agent)	256-0618-00	Pound	.395	CR
Rhoplex AC-33X (Binder)	256-0620-00	Pound	.660	CR
Dielectric Composition (#8299 Crystallizable Glass)	256-0630-00	Gram	5.620	CR
Nickel Oxide	256-0634-00	Pound	1.850	CR
Dimethyl Formamide	256-0667-00	Gallon	6.490	CR
Alumina (RC 20 GF)	256-0678-00			NP
Magnesium Carbonate	256-0679-00			DL
Alumina Oxide	256-0680-00			DL
Polyethylene Glycol	256-0681-00			DL
Alumina (C72RG)	256-0686-00	Pound	.390	CR
Strontium Zirconate	256-0700-00	Pound	5.310	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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CATALOG WRITER: CAROLE JACK, 629-3029.

COLOR TESTING

To ensure color consistency and paint quality, the following Technical Standards are available and may be ordered from the Standards Group:

062-5528-00	Tektronix Color System Color Application Standards Electronic Instruments
062-5523-00	Physical and Environmental Paint Products Tests
062-5534-00	Pre-shipment Test Procedure for Paint Products
062-5527-00	Tektronix Color System General Specification
062-5535-00	Tektronix Pigment List To Achieve Tektronix Corporate Colors

Written color standards and Visual Color Standards are available from the Color Lab:

062-5521-01	Available for eleven colors, to show the correct gloss and the pigments needed
thru	to make each color.
062-5521-11	
062-5521-01	Visual Color Standards for all Corporate Colors.
thru	
062-5521-71	

PAINTS

Color	Type and Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a		
					ND	Cost/Each	ST
Beige, Epon	Polyurethane	Sherwin-Williams 3509B	252-0388-00	Gallon		33.500	PP
Beige, Epon	Polyurethane	Polone T + 2.8	252-0384-00	Gallon		35.000	EN
Beige, Satin	Polyurethane, Polane T	Sherwin-Williams F99SX7	252-0329-00	Gallon		25.600	CR
Beige, Varian	Polyurethane, Polane T	Sherwin-Williams F99HX87	252-0306-00	Gallon		35.000	CS
Black, Low Gloss	Polyurethane, Polane T	Sherwin-Williams F99BX22	252-0326-00	Gallon		23.400	OT
Black	Optical Velvet	3M 101-C10	252-0124-00	Gallon			OB
Black	Ultra Dull	Lilly 846-7000A	252-0236-00	Gallon		5.650	CR
Black	Vinyl Enamel	Fuller O'Brien 925-B-4400	252-0064-00	Gallon		16.200	CR
Black, Corporate	High Solids		252-0064-20	Gallon			CR
Black, Corporate	High Solids	Fuller O'Brien 972-B-4400	252-0064-30	Gallon		27.800	CR
Black, Corporate	Polyurethane, Low Sheen	Sherwin-Williams Polane T F996X25	252-0347-00	Gallon		20.600	CS
Black, Carbide	Polyurethane, Low Sheen	Sherwin-Williams Polane T F63B12	252-0204-00	Gallon		22.300	CR
Black, Corporate	Water Based, Low Bake	Armitage Ecolotex W-5232	252-0064-10	Gallon		18.350	CR
Black, Lusterless			252-0393-00	Gallon		47.000	CR
Blue		Polane T Proctor	252-0392-00	Gallon		47.700	CR
Blue	Vinyl		252-0062-00	Gallon		17.500	CR
Blue, Light	Vinyl, Gloss Enamel		252-0063-00	Gallon		5.550	CR
Blue, Nitro	Polyurethane, Low Sheen	Sherwin-Williams Polane T F63L17	252-0266-00	Gallon	N	26.900	OT
Blue, Royal	Polyurethane	Armitage N-2099A Amorethane	252-0267-00	Gallon		25.920	CS
Blue, Tek	Water Based, Low Bake	Armitage Ecolotex W5227	252-0062-10	Gallon		21.180	CR
Blue, Tek	High Solids, Polyester	Technical Coatings 81A2	252-0062-20	Gallon		17.500	CR
Blue, Tek	High Solids, Polyester		252-0062-30	Gallon		26.200	CR
Blue, Tek	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99LX26	252-0328-00	Gallon		25.700	MP
Blue, #13NE	Enamel	Cont. Corp. of America	252-0180-00	Quart		3.500	CS
Brown		Polanet 993NS136	252-0395-00	Gallon		47.000	CR
Brown, Earth	High Solids	Fuller O'Brien	252-0229-33	Gallon		21.250	CR
Brown, Earth	Low Bake	Ecolotex	252-0229-13	Gallon		20.410	CR
Brown, Earth	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99NX117	252-0325-00	Gallon		26.000	CR
Gray			252-0391-00	Gallon		47.000	CR
Gray	Wrinkle	Fuller 89-H-925	252-0011-00		N		OB
Gray	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99AX17	252-0250-00	Gallon	N	33.500	CR
Gray, Dove	Vinyl, Baking		252-0733-00	Gallon		11.960	CR
Gray, Ivory	Water Based, Low Bake	Armitage Ecolotex W5262	252-0229-15	Gallon		18.540	CR
Gray, Ivory	High Soliders, Polyester	Technical Coatings	252-0229-25	Gallon		22.800	PP
Gray, Ivory	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99AX130	252-0334-00	Gallon		25.700	CR
Gray, Light	Enamel	Trail Chem Fed. Standard 595 26373	252-0159-00	Gallon		16.800	CS
Gray, Light		Komac	252-0385-00	Gallon		15.250	CR
Gray, Light	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99AX16	252-0249-00	Gallon		33.500	CR
Gray, Lusterless			252-0394-00	Gallon		25.700	CR
Gray, Silver	Water Based, Low Bake	Armitage Ecolotex, W5230	252-0187-10	Gallon		18.440	CR
Gray, Silver	High Solids Polyester	Technical Coatings 81E10	252-0187-20	Gallon		21.840	CR
Gray, Silver	High Solids Polyester	Fuller O'Brien	252-0187-30	Gallon		27.000	CR
Gray, Silver	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99AX123	252-0327-00	Gallon		26.000	MP
Gray, Slate	Water Based, Low Bake	Armitage Ecolotex W5261	252-0229-14	Gallon		18.540	CR
Gray, Slate	Polyurethane	Sherwin-Williams Polane T F99AX124	252-0333-00	Gallon			DL
Gray, Trail	Enamel, (MIL-E-15090 Class 2, Type 3)	Trail Chemical Fed STD 595	252-0224-00	Gallon		24.400	CR
Gray, TV	Water Based, Low Bake	Armitage Ecolotex, W-5229	252-0217-10	Gallon		18.520	CR
Gray, TV	High Solids, Polyester	Technical Coatings, 81E9	252-0217-20	Gallon		21.250	CR
Gray, TV	High Solids, Polyester	Fuller O'Brien	252-0217-30	Gallon		27.000	CR
Gray, TV	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99AX19	252-0262-00	Gallon		23.200	OT
Green	Vinyl, Baking		252-0653-00	Gallon		29.900	CR
Orange	Enamel	Trail Chemical Fed. Standard 595-22203	252-0273-00	Gallon		25.250	OT
Red, Gloss	Polyurethane	Sherwin-Williams Polane B F99RX5	252-0248-00	Gallon		41.150	CR
Red	Vinyl, Baking		252-0652-00	Gallon		29.900	CR
Red	Polyurethane, Transparent	VM/PNAPTHA	252-0373-00	Gallon			CR
Tan, Smoke	Water Based, Low Bake	Armitage Ecolotex W5231	252-0229-12	Gallon		16.630	CR
Tan, Smoke	High Solids Polyester	Technical Coatings B1D11	252-0229-22	Gallon		19.130	CR
Tan, Smoke	Polyurethane, Low Sheen	Sherwin-Williams Polane T F99AX120	252-0318-00	Gallon		22.150	CR
Tan, Tek	Water Based, Low Bake	Armitage Ecolotex, W5228	252-0203-11	Gallon		18.420	CR
Tan, Tek	High Solids Polyester	Technical Coatings 81D12	252-0203-21	Gallon		22.300	CR
Tan, Tek	Polyurethane Enamel, Low Sheen	Sherwin-Williams Polane B F99HX6	252-0330-00	Gallon		25.300	MP
White	Flat Enamel	Fuller 921-W-4200	252-0127-00	Gallon		35.000	CR
White	Acrylic Lacquer	Equipment Distributors A1199	252-0157-00	Gallon		28.950	CR
White, Colonial	Polyurethane	Armitage N-2069A	252-0268-00	Gallon		22.540	CS
White, Linear	Polyurethane, Polane T	Sherwin-Williams F63W12	252-0723-00	Gallon		24.750	CS
White, Pearl	Polyurethane, Polane T	Sherwin-Williams F99AX132	252-0335-00	Gallon		24.850	CR
Yellow Tan	Polyurethane	Fed 595-23690	252-0372-00	Gallon			PP

^a The nominal price (at time of printing) is listed in the cost column. For ND Codes (New Design Recommendations) and Status Codes, see tab marked CODES in the back of this catalog.

ADDITIVES

THINNERS AND REDUCERS

Usage	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Alpha #433		006-7074-00	Gallon	8.770	CR
Alpha-Cryl (Use with 252-0157-00)	Equipment Distributors PNT-90	252-0158-00	Gallon	8.650	CS
Enamel, Use with DE-700 (006-0429-00)	Advance T-460	006-0432-00	Gallon		DL
Epoxy, Use with Fast-dry Spray	Fuller 6612	252-0153-00	Gallon	4.100	CS
Lacquer	Fuller 74-0212	006-0027-00	Gallon	3.260	CR
Lacquer	Sherwin Williams R99-KY11	006-0695-00	Gallon	1.840	CR
Lacquer, Metal Etching Type	Fuller 74-C242	006-0098-00	Gallon		DL
Nomenclature Ink	Hysol AD-2003	006-6877-00	Gallon	30.300	CR
Photoresistant		252-0448-00	Gallon	28.740	CR
Polyurethane (Polane T)	Sherwin Williams R7KB29	252-0252-00	Gallon	7.050	CR
Primer, Metal Etching	Fuller 381-16	252-0028-00	Gallon	8.750	CR
Primer, Zinc-Chromate	Fuller 181-00	006-3401-00	Gallon	6.950	CR
Reducer, Polyurethane	S921 (66C20)	252-0338-00	Gallon	7.720	CR
Reducer	995-C-4906	252-0353-00	Gallon	14.230	CR
Vinyl, Electrostatic Spray	Fuller 995-C-4402	252-0091-00	Gallon	4.970	CR
VynaKote, Clear (252-0029-00)		252-0030-00			DL

EPOXY RESIN POWDER

Color	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Beige, Satin	Fuller EF-T-402-M-0	252-0259-00	Pound	5.510	CR
Black	Fuller EF-B-534-S-0	252-0272-00	Pound	2.200	CR
Brown, Earth	Fuller EF-J-402-S-2	252-0259-02	Pound	4.900	CR
Gray, Ivory	Fuller EF-H-401-S-1	252-0259-04	Pound	4.900	CR
Gray, Slate	Fuller EF-H-407-T-3	252-0259-03	Pound	4.900	CR
Tan, Smoke	Fuller EF-T-403-S-1	252-0259-01	Pound	5.210	CR
Tan, Tek	Fuller EF-T-401-T-1	252-0203-05	Pound	4.000	CR
	3M 235	252-0089-00	Pound		DL
	3M 241	252-0077-00	Pound		DL
Tan, Tek		252-0367-00	Pound		PP

CATALYSTS

Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
			Cost/Each	ST
Armitage C-100	252-0742-00	Gallon	28.110	CR
Hexcel Corp. 3301	006-1215-00	Can		DL
Hexcel Corp. 3301	006-1215-01	Gallon		DL
Emerson & Cumming 11	252-0258-00	Pound		DL
RS650 (Polyurethane)	252-0337-00	Gallon	23.380	CR
Sherwin Williams Polane V66V27, Interior Use	252-0251-00	Gallon	24.100	CR
Sherwin Williams Polane V66V29, Exterior Use (UV Stabilized)	252-0307-00	Gallon	24.100	CR
Shipley 9F	006-1821-00	Gallon		DL
Westwood Ceramic Supply	006-1214-00	Can		DL
Westwood Ceramic Supply	006-1214-01	Can		DL
S, 3110, RTU	006-7029-00	Gram	.006	PP
F, 3110, RTU	006-7030-00	Gram	.024	PP
1, 3110, RTU	006-7031-00	Gram	.025	PP

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PRIMERS

Color	Type & Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Gray Gray, Light Green Green Tan, Smoke	Vinyl, Fast Dry, Acid Catalized	Dow Corning 1204	006-2475-00	Can	11.910	CR
		Dow Corning 92-109	252-0215-00	Pint	33.830	CR
		1200 Sylgard	006-7024-00	Ounce	.625	PP
			252-0382-00	Gallon		PP
	Metal Etching Chem-O-Sol Rack-Coating Low Bake Metal Etching	Eoff Electric 1317	006-3449-00	Can		DL
		PK 4111	006-0353-00	Gallon		DL
		Microsol C1452	006-1749-00	Gallon		DL
			252-0360-00	Gallon	12.440	CR
	Zinc-Chromate Rack Coating Spray-Fil	Fuller 321-24	252-0027-00	Gallon	7.950	CR
		Fuller 321-27	006-3402-00	Gallon	24.750	CR
		Microsol E1315	006-1748-00			DL
		D99AX1	252-0339-00	Gallon	19.650	CR

LACQUERS

Color	Type & Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Black Black Blue Blue, Baby Blue, Regal	Spraying, Flat Spraying, Glossy	Eoff Electric 1602	006-3453-00	Can		DL
		Eoff Electric 1601	006-3452-00	Can		DL
	Spraying Spraying	Fuller 910-K-4400	252-0182-00	Gallon	12.200	CR
		Eoff Electric 1902	006-3459-00	Can		DL
		Eoff Electric 1901	006-3458-00	Can		DL
						DL
	Spraying Spraying Spraying Spraying Acrylic	Eoff Electric 2202	006-3464-00	Can		DL
		Eoff Electric 2501	006-3467-00	Can		DL
		Fuller 910-C-4201	006-0611-00	Gallon	14.800	CR
		Eoff Electric 1304	006-3446-00	Can		DL
Brass Brown, Leather Clear Clear Clear	Acrylic Acrylic, Spraying Spraying Spraying Spraying	Equipment Distributors 827	252-0191-00	Gallon	24.100	CR
			006-7033-00	Gallon	3.590	PP
		Eoff Electric 2201	006-3463-00	Can		DL
		Eoff Electric 1701	006-3456-00	Can		DL
	Gold, Bright Gold, Tek Gray, Machine	Rasmussen R-5171	006-2885-00	Gallon		DL
		Eoff Electric 1603	006-3454-00	Can		DL
						DL
						DL
	Gray, Shadow Green, Hunter Orange, Sunset Red, Cherry Silver	Eoff Electric 1604	006-3455-00	Can		DL
		Eoff Electric 2001	006-3461-00	Can		DL
		Eoff Electric 2401	006-3466-00	Can		DL
		Eoff Electric 2101	006-3462-00	Can		DL
White White, Antique Yellow, Chrome Semigloss	Spraying Spraying Spraying High Build Acrylic	Eoff Electric 1401	006-3450-00	Can		DL
		Eoff Electric 1501	006-3451-00	Can		DL
		Eoff Electric 1503	006-3460-00	Can		DL
		Eoff Electric 1801	006-3457-00	Can		DL
	Aluminizing	Rasmussen R-2111	006-2870-00	Gallon		DL
		Insul-X Products, Insul-X A-11	252-0021-00	Gallon	14.650	CR
						DL
		E9802	439-0386-00	Gallon	5.680	CR

VARNISHES

Type & Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Baking Silicone, Electrical	Schenectady Isonel 31 Dow Corning 997	252-0082-00 252-0169-00	Gallon Pint	11.500	CR DL

ANTI-STATIC SPRAY

Type & Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Acrylic, Electrostatic	Indusco 230	006-1791-00	Gallon	7.450	CR

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SOLVENTS

Name	Type and Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Acetate, Amyl	Purified	American Scientific & Chemical	006-2783-00	Gallon	53.000	CR
Acetate, Butyl	Normal		006-0785-00	Gallon	3.820	CR
Acetate, Ethyl	Reagent, Anhydrous	American Scientific & Chemical, MCBEX	006-3222-00	Gallon	39.520	CR
Acetate, Ethyl			006-0502-00	Gallon	4.030	CR
Acetone	Electronic Grade		006-0455-01	Bottle	4.900	CR
Acetone	Electronic Grade	Mallinckrodt #2441	006-3581-00	Gallon		DL
Acetone	CP		006-0500-00	Gallon		CR
Acetone	Electronic Grade	#14510	006-2548-00	Gallon	3.250	CR
Acetone	Electronic Grade	B & A 2750	006-0455-00	Pint		DL
Alcohol	Polyvinyl, Grade 51-05		252-0024-00	Pound	1.090	CR
Alcohol, Ethyl	Reagent, Denatured	American Scientific & Chemical, MCBAX	006-3223-00	Gallon	22.860	CR
Alcohol, Ethyl	Denatured		006-0553-00	Gallon	2.060	CR
Alcohol, Isopropyl	Electronic Grade	#14513	006-2549-00	Gallon	2.630	CR
Alcohol, Isopropyl	Commercial		006-0034-00	Gallon	2.160	CR
Alcohol, Isopropyl	Electronic		006-1097-00	Gallon		DL
Butyl Carbitol			006-0361-00	Gallon	4.800	CR
Butyl Cellosolve			006-0170-00	Gallon	3.500	CR
Butyl Compound	Black		252-0133-00	Pound		DL
Chevron Light			006-1165-00			DL
Chlorothene		Dow	006-2381-00	Gallon	5.220	CR
Dioxane	Reagent	Mallinckrodt #4937	006-0793-00	Gallon		DL
Ethylene Dichloride	AR	Mallinckrodt #4966	006-1257-00	5-Pint Bottle		DL
Ethylene Glycol	Reagent		006-1703-00	Gallon	30.000	CR
Fotocol	(See Alcohol, Ethyl)					
Freon			252-0047-00	Gallon	14.710	CR
Freon		T-WD 602	006-7624-00	Gallon	20.880	CR
Freon	3 oz Aerosol	Rudd	252-0120-00	Each	1.380	CR
Freon	Circuit Coolant (12 oz)		006-0173-01	Can	1.670	CS
Freon		TE 35	006-2056-00	Gallon	10.550	CR
Freon, Te			006-1433-00	Gallon	12.610	CR
Freon, Tf	Degreaser (16 oz)	MS-180	006-1926-00	Can	2.560	CR
Gasoline, White			006-0556-00	Gallon	1.740	CR
Genesolv "D"		B & S #2798	006-1832-00	Gallon	16.020	CR
Kerosene			006-0597-00	Gallon	1.600	CR
Methanol	Reagent	Baker #9070	006-0009-00	Gallon	4.900	CR
Methanol		#14515	006-2550-00	Gallon		DL
Methanol	Technical		006-0085-00	Gallon	1.350	CR
Methylene Chloride			006-0616-00	Gallon	3.700	CR
Methyl-Ethyl Ketone			006-0690-00	Gallon	2.540	CR
Methyl-Isobutyl Ketone	Reagent Grade	AR #6247	006-1928-00	Gallon		DL
Methyl-Isobutyl Ketone	Reagent Grade		006-1928-01	Gallon	3.420	CR
Methyl-Isobutyl-Butyl		Sherwin Williams R7K94	252-0309-00	Gallon	7.580	PP
Methyl N-Amyl Keytone	Technical		252-0363-00	Gallon	5.270	CR
Perchloroethylene			006-0458-00	Gallon	5.420	CR
Perchloroethylene	Electronic Grade	Mallinckrodt #3123	006-3178-00	Gallon		DL
Socal #1			006-0696-00	Gallon	1.970	CR
Socal #2			006-0698-00	Gallon	2.000	CR
Standard Oil #325			006-0693-00	Gallon	1.570	CR
Thermoplastic Extender			252-0279-00	Gallon	7.450	CR
Toluene		Baker #9460	006-0613-00	Gallon	8.180	CR
Toluol			252-0008-00	Gallon	1.790	CR
Trichlorethylene			006-0750-00	Gallon	5.460	CR
Trichlorethylene	Electronic		006-1037-00	Pint	1.591	CR
Triethanolamine 99		Dow Chemical	006-6581-00	Gram	.001	CR
Xylene	Reagent	#2415	006-1161-00	Gallon	8.980	CR
Xylol			252-0006-00	Gallon	1.840	CR

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SEALERS

Type	Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Loctite	With curing agent	Anderson, Sylgard 567, Part A & B	252-0354-00	Gram	17.375	CR
Silastic		AV87-31	006-1595-00	Bottle		DL
Silastic		Dow Corning RTV	006-3141-00	Each		DL
Silastic		Dow Corning RTV	006-3141-01	Each	102.850	CR
Silastic		Dow Corning, PTV 738	006-1923-00	Tube	3.525	CR
Silicone	Clear Translucent	GE SE-1201	006-0365-00	Each		DL
Silicone		GE-162	006-1171-03	Each	9.170	CR
Silicone Rubber	White	Dow Corning RTV 1890	252-0150-00	Gallon		DL
Silicone Rubber		Dow Corning RTV 3145	006-1171-00	Each	13.100	CS
Silicone Rubber		Dow Corning RTV 3145	006-1171-01	Each	47.000	CR
Silicone Rubber	Gray (3 oz)	Dow Corning RTV 3144	006-2302-00	Tube	13.400	CR
Silicone Rubber	Gray (12 oz)	Dow Corning RTV 3144	006-2302-01	Tube	28.140	CR

PAINT REMOVERS

Type	Remarks	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Stripper	American Scientific & Chemical 2695	006-1242-00	Gallon	16.020	CR
Stripper		006-1965-00	Bottle	10.350	CR
Stripper		006-1912-00	Gallon		DL
Stripper		006-2564-00	Gallon		DL
Stripper		006-2905-00	Gallon		DL
Stripper	Oakite EZ	006-2958-00	Gallon		DL
Stripper		006-2993-00	Pound	3.260	CR
Stripper		006-2994-00	Gallon	13.420	CR
Stripper		006-2995-00	Gallon	14.880	CR
Stripper		006-3198-00	Gallon	16.100	CR
	Chemithon, Enstrip A				
	Chemithon, Enstrip NP 1				
	Chemithon, Enstrip NP 2				
	EKC Technology 712D				

MARKING INKS

Color	Use On	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Black	Thinner for Stanmark Etched Circuit Board	Stanmark 140-T-127	006-1002-00	Gallon	2.100	CR
Black		Lonco	006-1190-00	Gallon		DL
Black		Stanmark 192-9	006-1029-00	Gallon		DL
Blue		Wornowink Series M Ink & Catalyst	006-2612-00	Each		DL
Blue		Lonco	006-1441-00	Gallon		DL
Blue	Vinyl Insulation, Wire	Stanmark 192-8	006-1028-00	Gallon		DL
Brown		Stanmark 192-7	006-1027-00	Gallon		DL
Gray		Stanmark 192-2	006-1021-00	Gallon		DL
Green		Stanmark 192-6	006-1026-00	Gallon		DL
Orange		Stanmark 192-4	006-1023-00	Gallon		DL
Purple	Vinyl Insulation, Wire	Stanmark 192-5V	006-1025-00	Gallon		DL
Red		Stanmark 192-5	006-1024-00	Gallon		DL
White		Lonco	006-1189-00	Gallon		DL
White		Stanmark 192-1	006-1020-00	Gallon		DL
White		Wornowink Series M Ink & Catalyst	006-2611-00	Each		DL
Yellow	Vinyl Insulation, Wire	Stanmark 192-3	006-1022-00	Gallon		DL

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FINISHES, MISCELLANEOUS

Type	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Iridite 4P4	Allied-Kelite Division 4P4	006-0006-00	Pound	.468	CR
Iridite 14-2	Allied-Kelite Division 14-2	006-0435-00	Pound	8.740	CR
Chromate Conversion, Yellow	Rodip CD-3	006-1618-00	Pound		DL
Chromate Conversion, Yellow	Amchem, Alodine 1200	006-6567-00	Pound	7.560	CR
Chromate Conversion, Clear	Amchem, Alodine 1500	006-6369-00	Gallon	1.450	CR

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COATINGS

INSULATIVE

Color	Type and Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Transparent Black	Implosion Liquid Silicone Resin Corona Dope (2 oz)	Ruchothane CO-225 Dow Corning R-4-3117 GC 47-2	439-0313-00 252-0274-00 006-0541-00	Pound Pound Bottle	13.280 1.120	DL CS CR

CONDUCTIVE

Color	Type and Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Black	Static-bleed Extender	441 Electrodag Acheson Colloids Co. Electrodag SB-2 A-7299	252-0348-00 252-0238-00 439-0400-00	Gallon Gallon Gallon	114.000 6.850 7.580	CR CR CR
Dark Gray	EMI Shielding, Nickel Filled	Acheson Colloids Co. Electrodag 440	252-0269-00	Gallon	108.500	CR
Dark Gray	Nickel Filled	Bostik 695-50-1	252-0319-00	Gallon	85.000	PP
Dark Gray	Static-bleed	Acheson Colloids Co. Electrodag 158	252-0237-00	Gallon	91.280	CR
Silver Gray	Acrylic Silver Filled	Chromerics 52-01-04907-000	252-0247-00	Pound	280.000	CR

RESISTIVE

Resistance (Ω /cm)	Part Number	Unit of Measure	Codes ^a	
			Cost/Each	ST
1	256-0684-00	Gram	3.861	CS
10	256-0651-00	Gram	4.942	CR
100	256-0597-00	Gram		DL
100	256-0652-00	Gram	3.644	CR
1 k	256-0653-00	Gram	5.177	CR
1 k	256-0598-00	Gram		NP
8.5 k	256-0697-00	Gram	3.890	CR
10 k	256-0654-00	Gram	4.510	CR
100 k	256-0655-00	Gram	4.381	CR
100 k	256-0609-00	Gram		NP
1 M	256-0656-00	Gram	5.300	CR

PRECIOUS METAL

Color	Type and Remarks	Manufacturer & Number	Part Number	Unit of Measure	Codes ^a	
					Cost/Each	ST
Gold	Conductive Paste	Dupont DE 19898	256-0693-00	Gram	23.616	CR
Gold	Conductive Paste	Owens-Illinois 6985	256-0640-00	Gram	20.200	CR
Gold	Paste	LP50-2296	256-0615-00	Gram	19.710	CR
Gold	Resin	Englehard A-2660	257-0077-00	Gram	2.500	CR
Platinum-Gold	Conductive Paste	Electro Science Labs 5835	256-0666-00	Gram	21.128	CR
Paladium Silver	Conductive	Dupont DP 9061	256-0660-00	Pound	2.722	CR
Palladium, Platinum and Silver	Conductive Paste	Dupont 4093	256-0694-00	Gram	3.800	CR
Silver	Conductive Paint	Dynaloy 340	252-0165-00	Pint	294.000	CR
Silver	Conductive Paste (Screen Printable)	ESL 9990	256-0690-00	Gram	.700	CR
Silver	Paste	Dupont 6216	256-0579-00	Gram	.386	CR
Silver	Conductive Paste	Dupont DP4093	256-0689-00	Gram	3.510	CR
Silver	Conductive Paste	Thick Film Systems 3345AG	256-0691-00	Gram	1.200	CR
Silver	Paint	Dupont 7886	256-0562-00	Gram	1.248	CR
Silver Gray	Paint, 70% Silver Filled	Dupont 7713	252-0270-00	Gram	.759	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

SILICONE GREASE

Description	Remarks	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Dow Corning DC 4	2.02 oz	006-0315-00	Tube	6.950	CR
Dow Corning DC 33	5.30 oz	006-3272-00	Tube	7.870	CS
GE G330M	2.00 oz	006-1353-00	Tube	12.640	CR
GE G661M	8.00 oz	006-2207-00	Tube	8.200	CR
GE G322L		006-2761-00	Tube	12.210	CR
Thermaloy 251		006-2525-00	1 lb Can		DL
Thermaloy 249		006-2655-00	Tube	1.520	CR

LUBRICANTS

Description	Remarks	Part Number	Unit of Measure	Codes ^a	
				Cost/Each	ST
Becon 325	For Switch Lubrication	006-0219-00	Bottle	11.216	CR
Becon 325 Grease	For Switch Lubrication	006-0147-00	Pound	3.960	CS
Dow Corning 200	Silicone, Dielectric Fluid	256-0534-00	Gallon		DL
Dow Corning 5		006-4409-00	Tube		DL
Excelene	Polishing Oil	006-1103-00	Can	2.950	CR
Grease	Multipurpose	006-3684-00	Tube	2.290	CR
Grease	Multipurpose	006-3684-01	Bottle	14.980	CR
Lubriplate 14282	1/2 oz Tube	006-3167-00	Tube	.770	CR
Lubriplate A Type 105	5/16 oz Tube	006-0617-00	Tube	.400	CR
Lubricant Stick "Door Ease"		006-0618-00	Each	1.000	CR
Mobil 632		006-2531-00	Pound		DL
Mobil 45	For Transformers	256-0509-00	Gallon		OB
Rust-Lick EDM-30 Fluid		006-3157-00	Gallon		DL
Silicone	Fluid/Oil, 250	006-3492-00	Pint	34.000	CS
Union Marok 315 or Mobil Vactra 2		006-0013-00	Gallon	2.810	CR
Union Marok 1000 or Mobil Vactra 4		006-1681-00	Gallon	2.810	CR
Union Turbine Oil 150		006-2152-00	Gallon	2.730	CR
Union Turbine Oil 215		006-2118-00	Gallon	2.730	CR
Union Turbine Oil 700		006-0011-00	Gallon		DL
WD-40		006-0145-00	Gallon		DL
WD-40 w/Hydrocarbon Propellant		006-2574-00	Can	1.860	CS
IBM 23 Grease	1/2 oz Tube	006-4536-00	Tube		CS

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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SECTION 6
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IMPORTANT
READ THE FOLLOWING

The outline drawings are for reference purpose only. When you are considering using an extrusion, use these drawings to see if we have an extrusion in stock which could be used. If the outline drawing shows possibilities for your use, get a completely dimensioned drawing of the spec.

Prior to ordering any extrusion, or using Heat Sinks requiring extrusions, contact the appropriate division Purchasing Department to verify the availability of the part from vendors. If there is no tooling, the cost and availability of the extrusion will change.

Segments of the Mechanical Properties and Dimensional Tolerances for the Alloys & Tempers referenced in this section can be found under ASTM B221 and ANSI H35.2 in Section 16 of this Catalog. The full text of this ASTM and ANSI H35.2 can be obtained from Technical Standards, or if you have a particular question or you would like to review the ASTM and ANSI H35.2 further, you can call the Metallurgical Lab at 627-7259.

CATALOG WRITER: SANDRA PHILLIPS, 629-3030

TEK STANDARDS PERTAINING TO ALUMINUM EXTRUSIONS

Copies of these Standards can be obtained from Technical Standards.

- 062-1702-00A Fabrication Standards - Welding, Soldering & Brazing
- 062-1703-00A Finish Standards - Glossary of Terms
- 062-1713-00 Drafting Standards - Aluminum Extrusions (**Superseded by Aluminum Associations: Drafting Standard for Aluminum Extruded and Tubular Products, #2.**)
- 062-1714-00C Tooling Standards - N.C. Turret Press Tooling Shapes
- 062-1714-01 Tooling Standard - Wiedeman Round Perforations
- 062-2845-00A Finish Standards - Mechanically Applied Finishes
- 062-2848-00B Fabrication Standard - Bend Allowance & Deduction
- 062-2850-00A Finish Standard - Surface Texture (**Superseded by ANSI Y14.36**)
- 062-2868-00A Test Method - Finish Standard - Chromate Conversion Coating and Lacquer on Aluminum
- 062-2871-00 Finish Standard - Passivating
- 062-3616-00 Environmental Test - Basic Environmental Test Limits for Materials and Components
- 062-4777-00 Inspection Standards - Metal Cosmetic Standard (**Supersedes 062-1718-00 after August 18, 1983**)
- 062-5818-00 Metal Standard - General Information About Bulk Raw Material
- 062-5818-01 Metal Standards - Aluminum

INDUSTRY STANDARDS USED IN THIS SECTION

Segments of these Standards can be found in Section 16 of this Catalog. Copies of a complete Standard can be obtained from Technical Standards, or if you have a particular question you can call the Metallurgical Lab at 627-7259.

- ASTM B221 Aluminum & Aluminum Alloy Extruded Bar, Rod, Wire, Shape & Tube - Contains specs for chemical composition, mechanical properties, and corrosion tests. Applies to extruded products only. Does not contain dimensional tolerances.
- ANSI H35.2 Dimensional Tolerances for Aluminum Mill Products - Contains gauge, width, length, straightness, bow, and twist tolerances for all mill products and is referenced by the above ASTM spec. Does not contain chemical composition limits or mechanical properties.

ANGLES

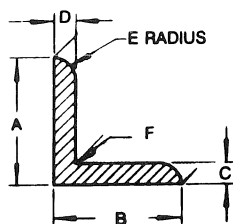


FIGURE 1

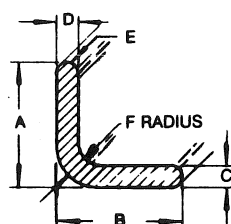


FIGURE 2

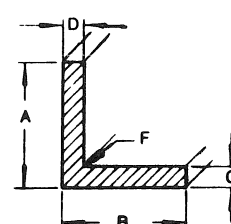
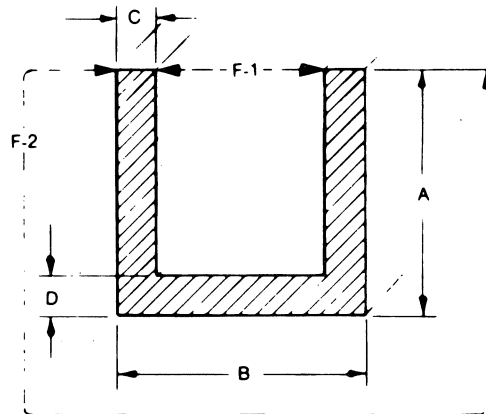


FIGURE 3

Dimensions						Finish	Alloy & Temper	Figure	Weight (lb/in)	Part Number	Codes ^a	
A	B	C	D	E	F						Cost	ST
.130	.750	.063	.125		.016	F-1 On Exposed Surfaces	6063-T5	1	.005	251-0242-00	.006/in	CS
.375	.375	.125	.125		.015	F-1 On All Surfaces	6063-T5	1	.008	251-1292-00	.012/in	CR
.375	1.250	.125	.125			F-1 On All Surfaces	6063-T6	1	.019	251-0144-00	.028/in	CR
.450	1.000	.100	.250		.015	F-1 On All Surfaces	6063-T6	1	.019	251-1675-00	.025/in	CS
.500	.500	.125	.125				6063-T5	1	.011	251-1172-00	.021/in	CR
.750	.750	.063	.063				6063-T52	1	.009	251-1298-00	.025/in	CR
.750	.750	.125	.125	.125	.094		6063-T6	2	.017	251-0002-00	.030/in	CR
.750	.750	.150	.150	.016	.218	F-2 On Exposed Surfaces	6063-T6	3	.020	251-1008-00	.248/in	CR
.875	.875	.125	.125		.094	F-2 On Exposed Surfaces	6063-T6	1	.020	251-0191-00	.039/in	CR
.875	.875	.094	.094	.047	.375/.281	F-1 On All Surfaces	6063-T6	3	.014	251-0069-00		OB
1.000	1.000	.062	.062		.015		6063-T5	1	.012	251-0049-00	.021/in	CR
1.000	1.350	.312	.312		.031	F-2 On All Surfaces	6063-T5	1	.064	251-0245-00	.035/in	CS
1.100	.655	.250	.150		.031 Max	F-1 On All Surfaces	6063-T6	1	.028	251-1054-00	.049/in	CS
1.250	.800	.560	.225		.125 Max	F-1 On All Surfaces	6063-T6	1	.061	251-1181-00		OB
1.250	1.500	.188	.188	.125	.188	F-1 On All Surfaces	6061-T6	2	.083	251-0205-00	.113/in	CS
1.250	1.250	.125	.125		.015		6063-T5	1	.030	251-0119-00	.056/in	CS
1.361	.750	.187	.080		.062	F-0 On All Surfaces	6063-T6	1	.023	251-1681-00	.133/in	CS
2.000	2.000	.250	.250	.125	.250	F-1 On All Surfaces	6063-T6	2	.088	251-1020-00	.119/in	CR
2.700	1.000	.165	.165		.030 Max	F-1 On All Surfaces	6063-T5	1	.058	251-1698-00	.142/in	CS

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

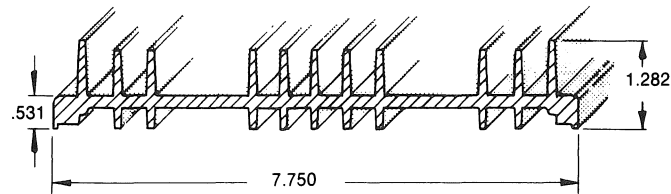
CHANNELS



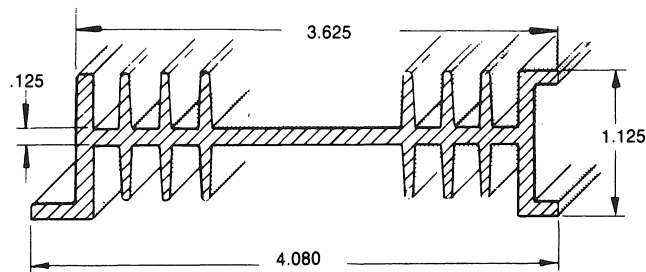
Dimensions				Finish	Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
A	B	C	D					Cost	ST
.150	.337	.047	.050	F-2 Except as Noted	6063-T6	.003	251-1495-00	.008/in	CR
.188	.875	.156	.126	F-0 On all Surfaces	6063-T6		251-1633-00		DL
.375	.500	.125	.125	F-0 On all Surfaces	6063-T5	.013	251-0126-00	.026/in	CR
.500	1.000	.125	.125	F-1 On all Surfaces	6063-T52	.022	251-1703-00	.033/in	CR
.710	1.615	.375	.210	F-2 Except as Noted	6063-T6	.071	251-1609-00	.157/in	CR
.938	1.250	.150	.136	F-0 On all Surfaces	6063-T6	.038	251-0226-00	.084/in	CR
.950	1.550	.125	.125	F-1 On all Surfaces	6063-T6	.039	251-1129-00	1.114/in	CR
1.105	1.624	.250	.210	F-1 On all Surfaces	6063-T6	.073	251-1049-00	.936/in	CS
1.250	1.250	.125	.125	F-0 On all Surfaces	6063-T5		251-0004-00		OB
1.312	7.055	.315	.188	F-2 Except as Noted	6063-T6	.220	251-0251-00	.559/in	CR
1.312	5.308	.231	.190	F-0 On all Surfaces	6063-T6	.150	251-1003-00	.375/in	CR
1.500	2.500	.125	.125	F-1 On all Surfaces	6061-T6	.066	251-1312-00	.121/in	CR
8.805	1.312	.312	.188	F-2 Except as Noted	6063-T6	.236	251-1637-00	.627/in	CS

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

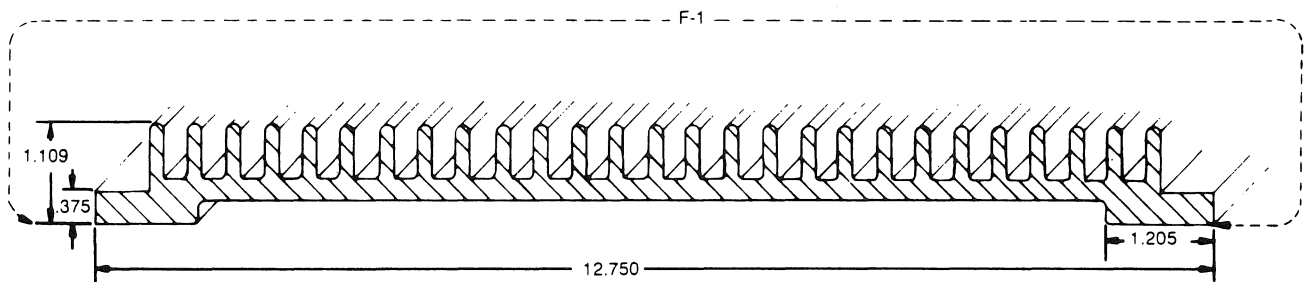
EXTRUSIONS USED FOR HEAT SINKS



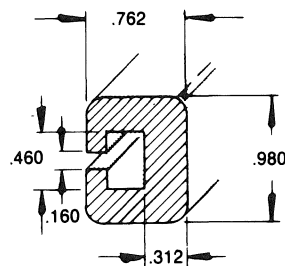
COST:^a .171/in STATUS CODE:^a CS 251-0177-00 WEIGHT (lb/in): .226 ALLOY & TEMPER: 6063-T6



STATUS CODE:^a OB 251-0201-00 WEIGHT (lb/in): .113 ALLOY & TEMPER: 6063-T5



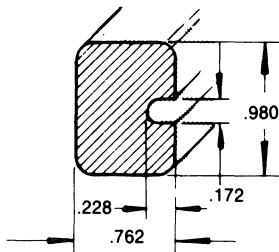
COST:^a 1.282/in STATUS CODE:^a CR 251-0587-00 WEIGHT (lb/in): .616 ALLOY & TEMPER: 6063-T6 FINISH: F-0 Except as noted



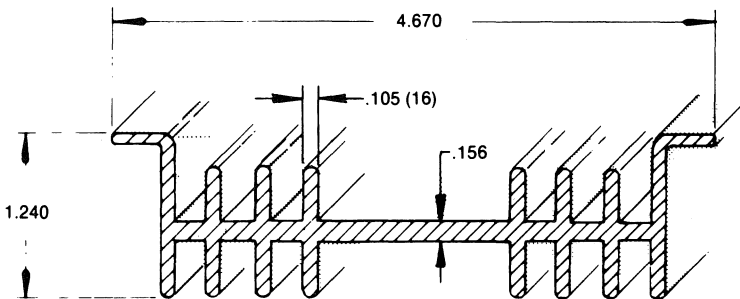
COST:^a .186/in STATUS CODE:^a CR 251-1029-00 WEIGHT (lb/in): .057 ALLOY & TEMPER: 6061-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

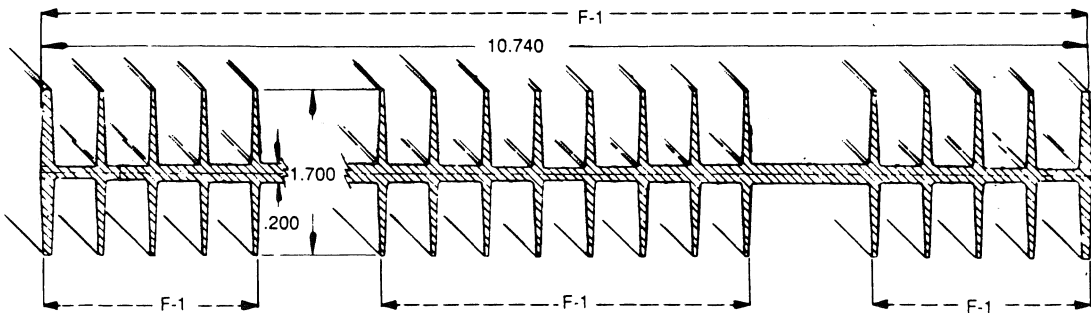
EXTRUSIONS USED FOR HEAT SINKS (cont)



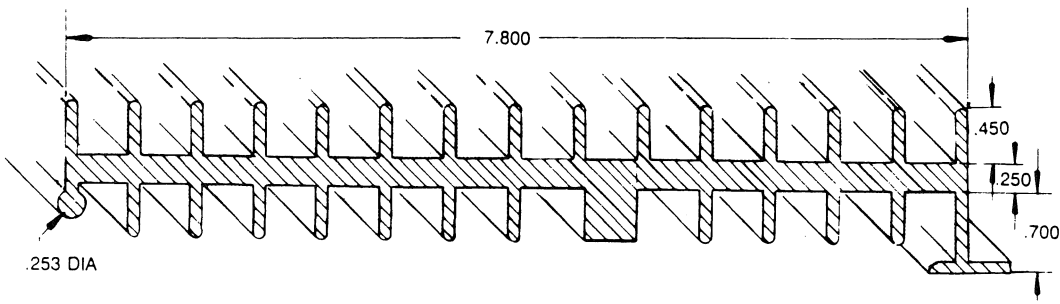
COST:^a .512/in STATUS CODE:^a CR 251-1030-00 WEIGHT (lb/in): .070 ALLOY & TEMPER: 6061-T6



COST:^a 10.570/ft STATUS CODE:^a CR 251-1038-00 ALLOY & TEMPER: 6063-T6



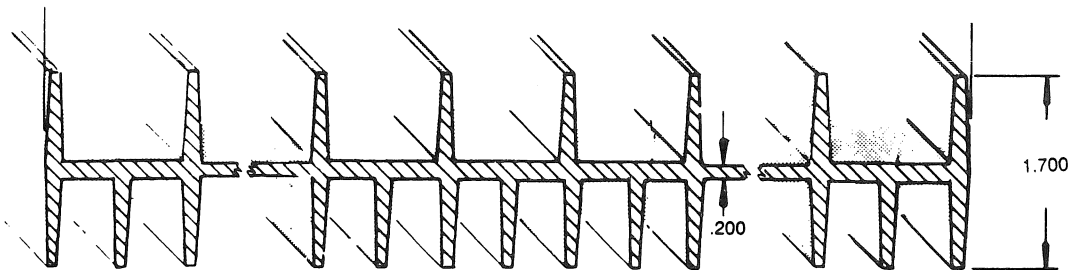
COST:^a .924/in STATUS CODE:^a CS 251-1048-00 WEIGHT (lb/in): .454 ALLOY & TEMPER: 6063-T5 FINISH: F-2 Except as noted



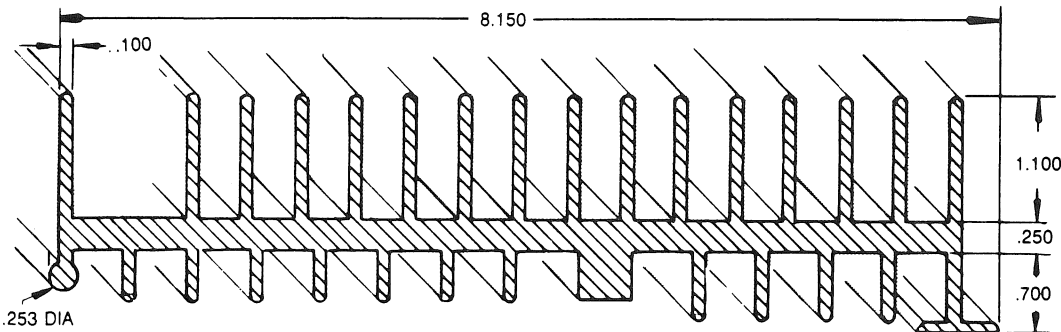
STATUS CODE:^a OB 251-1061-00 WEIGHT (lb/in): .345 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

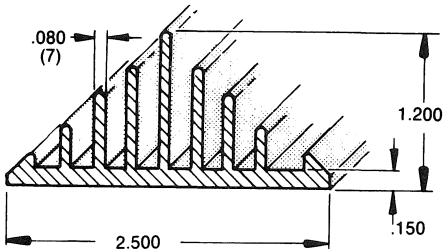
EXTRUSIONS USED FOR HEAT SINKS (cont)



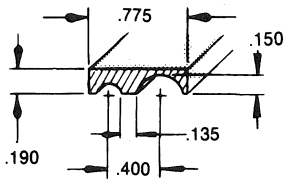
251-1093-00
STATUS CODE:^a OB ALLOY & TEMPER: 6063-T6



251-1110-00
STATUS CODE:^a OB ALLOY & TEMPER: 6063-T6



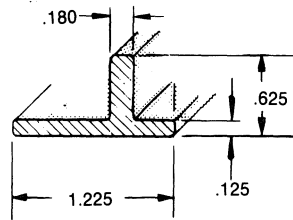
251-1122-00
STATUS CODE:^a OB WEIGHT (lb/in): .075 ALLOY & TEMPER: 6063-T6



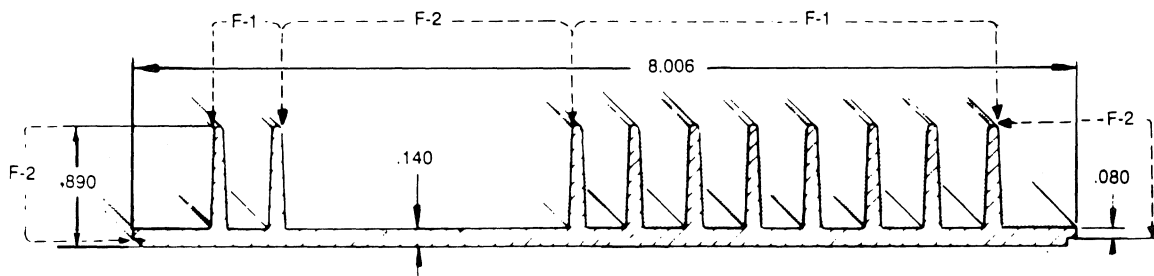
251-1143-00
COST:^a .012/in STATUS CODE:^a CS WEIGHT (lb/in): .010 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

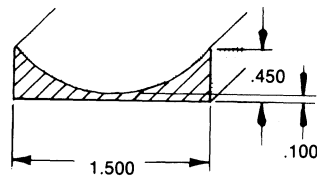
EXTRUSIONS USED FOR HEAT SINKS (cont)



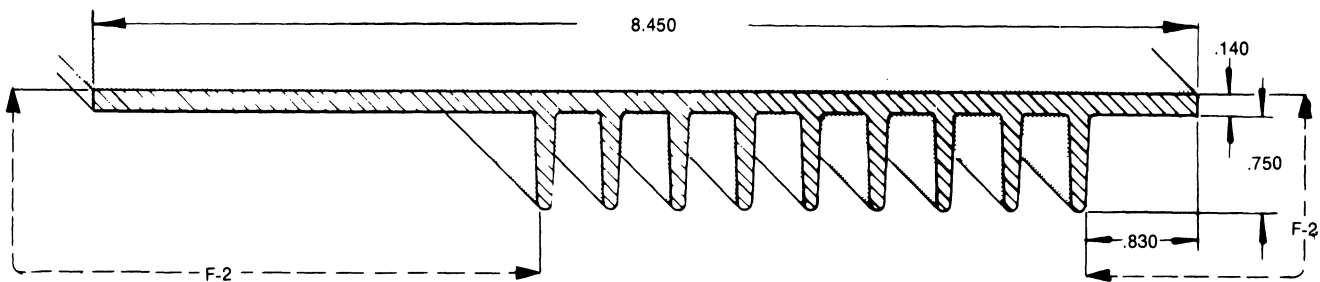
COST:^a .017/in STATUS CODE:^a CS 251-1177-00 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6



COST:^a .407/in STATUS CODE:^a CR 251-1199-00 WEIGHT (lb/in): .191 ALLOY & TEMPER: 6063-T6



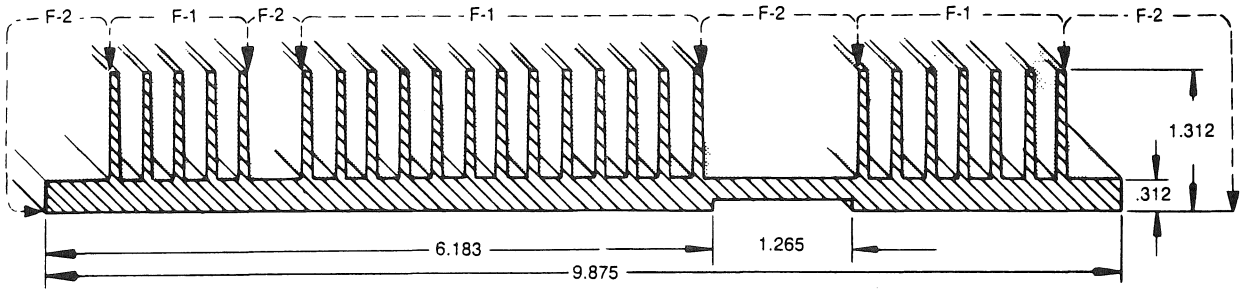
COST:^a .084/in STATUS CODE:^a CR 251-1201-00 WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6



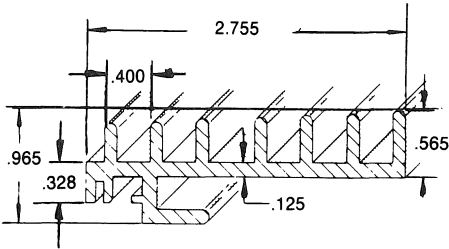
COST:^a .454/in STATUS CODE:^a CR 251-1220-00 WEIGHT (lb/in): .194 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

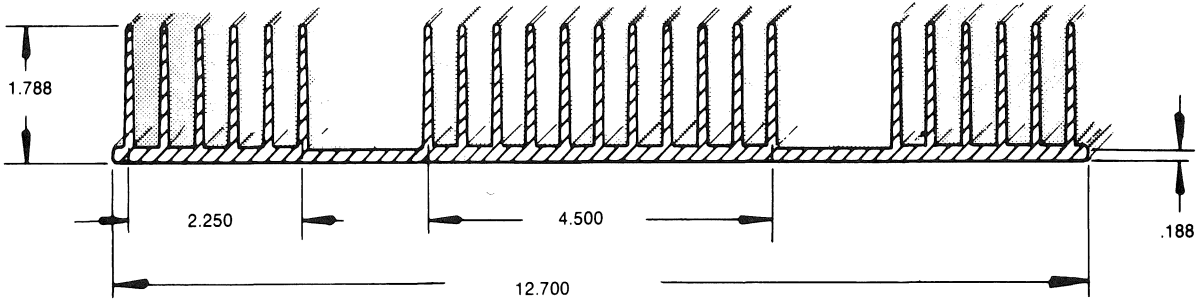
EXTRUSIONS USED FOR HEAT SINKS (cont)



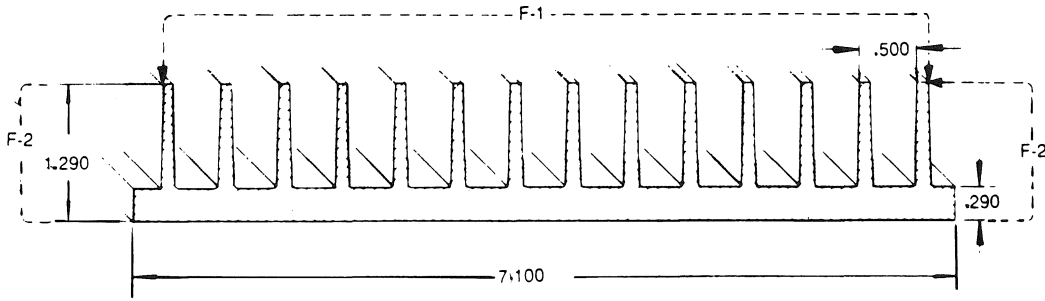
COST:^a .899/in STATUS CODE:^a CS 251-1320-00 WEIGHT (lb/in): .471 ALLOY & TEMPER: 6063-T6



COST:^a .263/in STATUS CODE:^a CS 251-1365-00 WEIGHT (lb/in): .076 ALLOY & TEMPER: 6063-T6 FINISH: F-1 On all surfaces



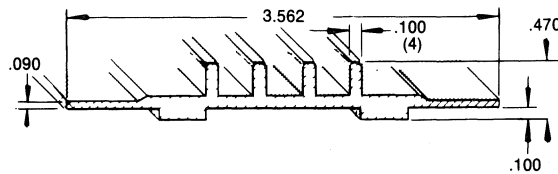
COST:^a .829/in STATUS CODE:^a CS 251-1366-00 WEIGHT (lb/in): .666 ALLOY & TEMPER: 6063-T6



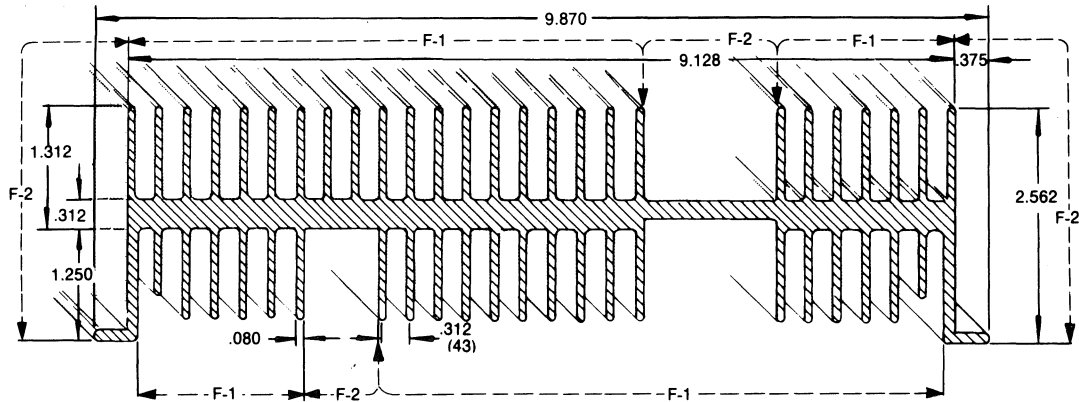
COST:^a .808/in STATUS CODE:^a CR 251-1377-00 WEIGHT (lb/in): .383 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as the cost. For Status Codes, see tab marked CODES in the back of this catalog.

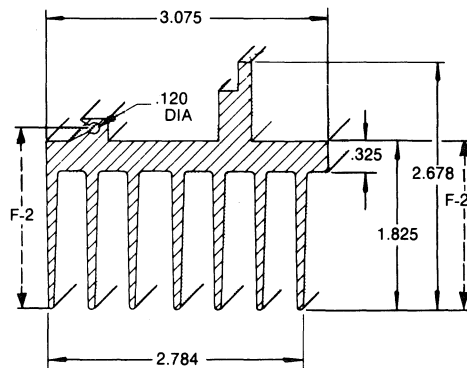
EXTRUSIONS USED FOR HEAT SINKS (cont)



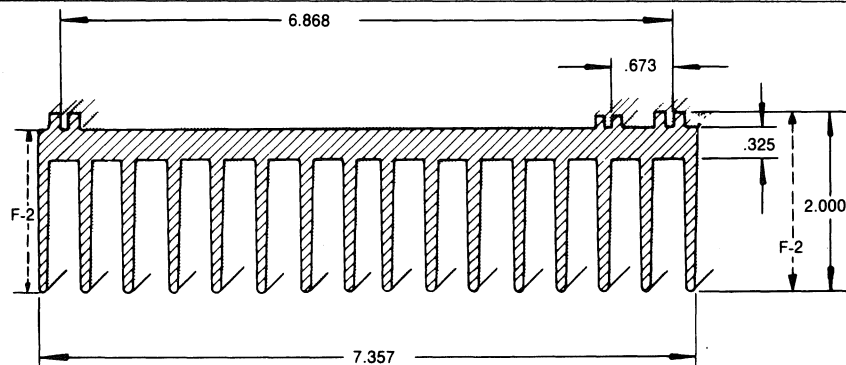
COST:^a .176/in STATUS CODE:^a CR 251-1390-00 WEIGHT (lb/in): .059 ALLOY & TEMPER: 6063-T6



COST:^a 1.049/in STATUS CODE:^a CS 251-1433-00 WEIGHT (lb/in): .703 ALLOY & TEMPER: 6063-T5



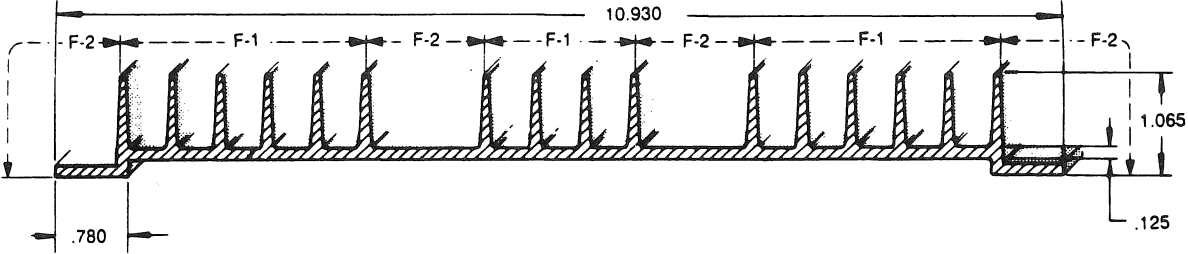
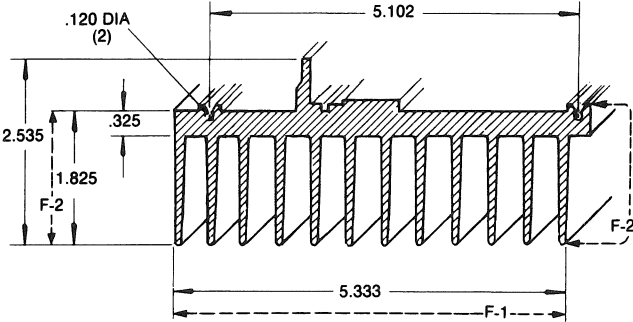
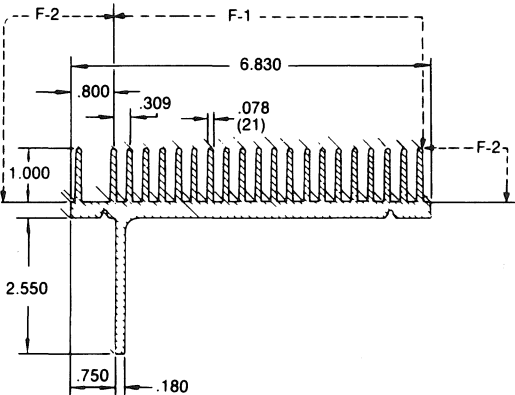
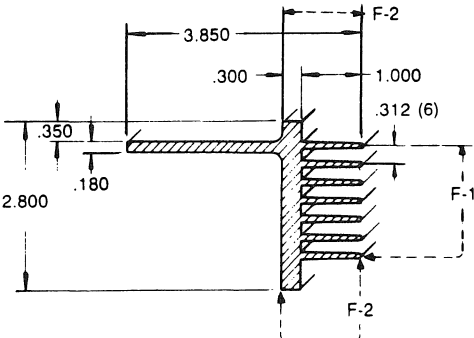
COST:^a .603/in STATUS CODE:^a CS 251-1454-00 WEIGHT (lb/in): .229 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



COST:^a 1.118/in STATUS CODE:^a CR 251-1455-00 WEIGHT (lb/in): .476 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted

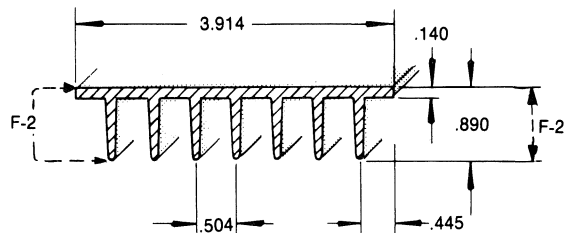
^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

EXTRUSIONS USED FOR HEAT SINKS (cont)

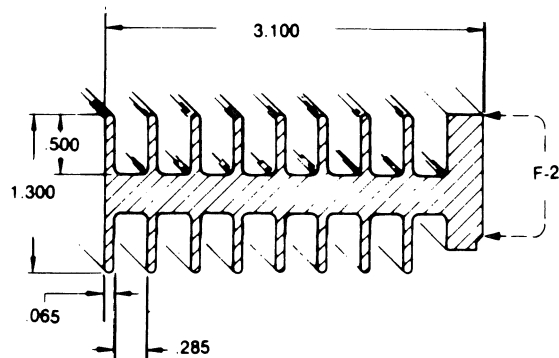

COST: ^a .283/in STATUS CODE: ^a CS 251-1457-00 WEIGHT (lb/in): .248 ALLOY & TEMPER: 6063-T6 FINISH: F-0 Except as noted

COST: ^a .853/in STATUS CODE: ^a OT 251-1479-00 WEIGHT (lb/in): .383 ALLOY & TEMPER: 6063-T6

COST: ^a 2.020/in STATUS CODE: ^a CS 251-1507-00 WEIGHT (lb/in): .429 ALLOY & TEMPER: 6063-T6

COST: ^a .360/in STATUS CODE: ^a CS 251-1545-00 WEIGHT (lb/in): .183 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

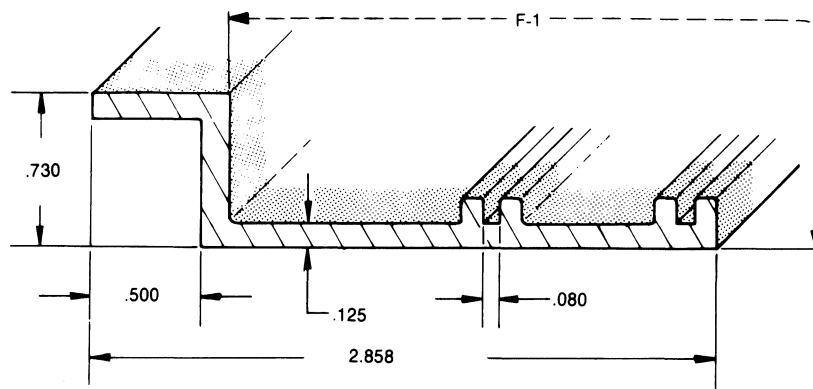
EXTRUSIONS USED FOR HEAT SINKS (cont)



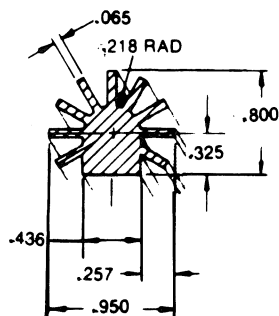
251-1549-00
 COST:^a .220/in STATUS CODE:^a CR WEIGHT (lb/in): .114 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



251-1550-00
 COST:^a .476/in STATUS CODE:^a CS WEIGHT (lb/in): .170 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



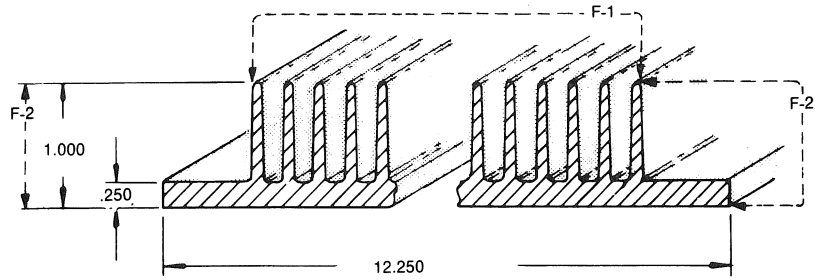
251-1575-00
 COST:^a .131/in STATUS CODE:^a CS WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6 FINISH: F-0 Except as noted



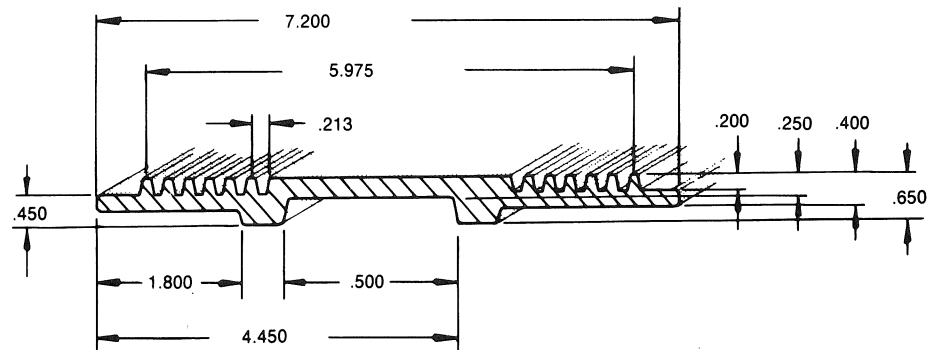
251-1580-00
 COST:^a .190/in STATUS CODE:^a CR WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6 FINISH: F-0 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

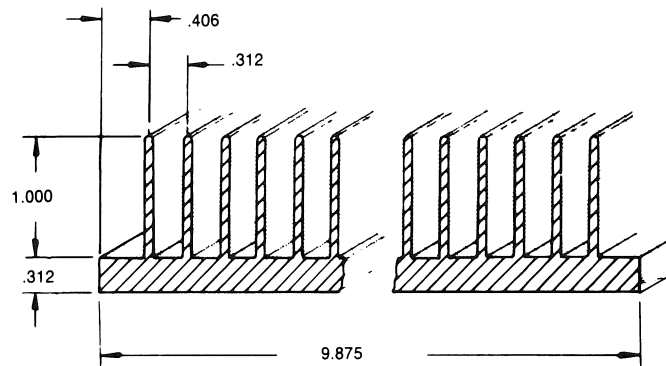
EXTRUSIONS USED FOR HEAT SINKS (cont)



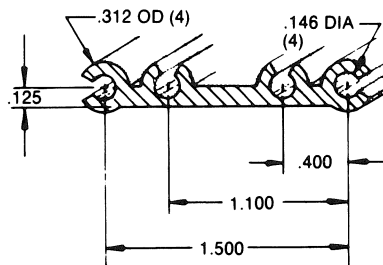
COST:^a 60.480/ft 251-1588-00 STATUS CODE:^a CR ALLOY & TEMPER: 6063-T6



COST:^a 2.950/lb 251-1589-00 STATUS CODE:^a CS ALLOY & TEMPER: 6063-T6



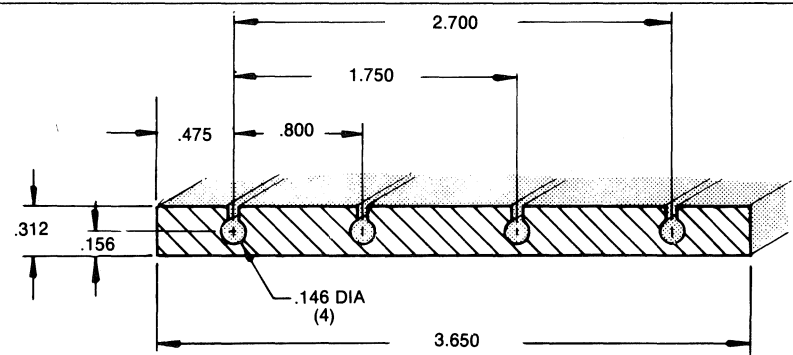
COST:^a 1.537/in 251-1591-00 STATUS CODE:^a CS WEIGHT (lb/in): .083 ALLOY & TEMPER: 6063-T6



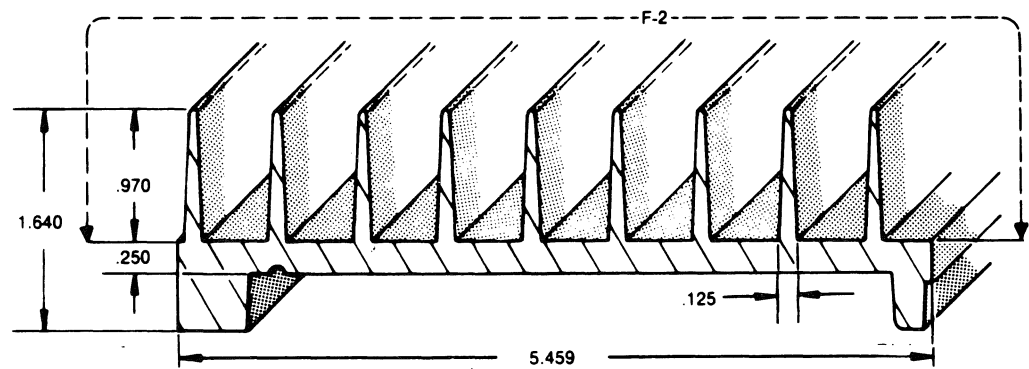
COST:^a 1.920/lb 251-1598-00 STATUS CODE:^a CS ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

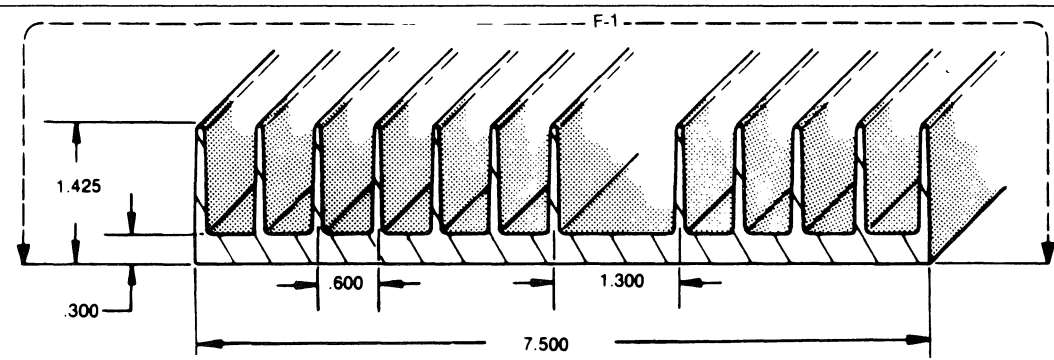
EXTRUSIONS USED FOR HEAT SINKS (cont)



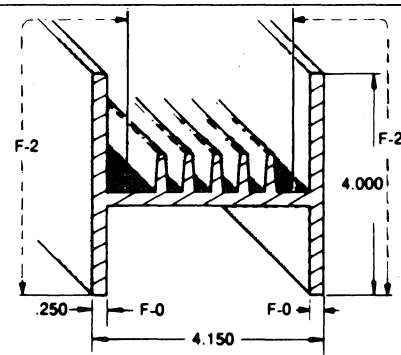
251-1599-00
COST:^a 1.932/lb STATUS CODE:^a CS ALLOY & TEMPER: 6063-T6



251-1611-00
STATUS CODE:^a DL WEIGHT (lb/in): .250 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



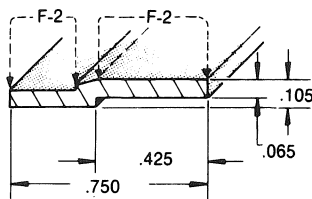
251-1622-00
COST:^a 1.260/in STATUS CODE:^a CS WEIGHT (lb/in): .341 ALLOY & TEMPER: 6063-T6 FINISH: F-0 Except as noted



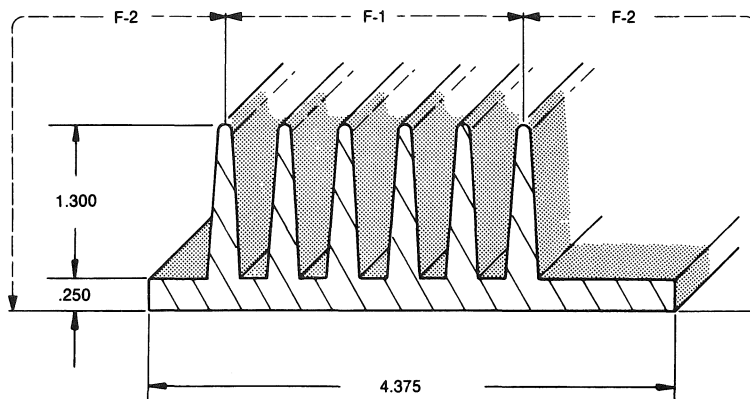
251-1624-00
COST:^a .762/in STATUS CODE:^a CR WEIGHT (lb/in): .333 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

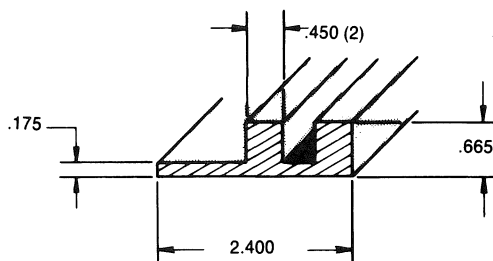
EXTRUSIONS USED FOR HEAT SINKS (cont)



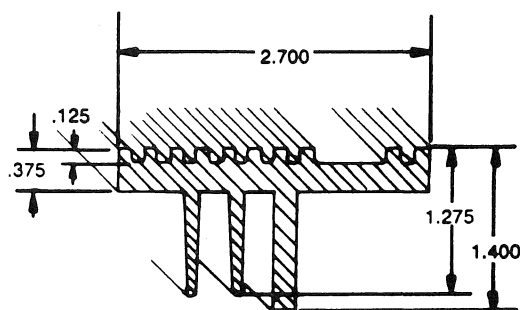
251-1640-00
 COST:^a .010/in STATUS CODE:^a CR WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



251-1656-00
 COST:^a .640/in STATUS CODE:^a CR WEIGHT (lb/in): .234 ALLOY & TEMPER: 6063-T6 FINISH: F-0 Except as noted



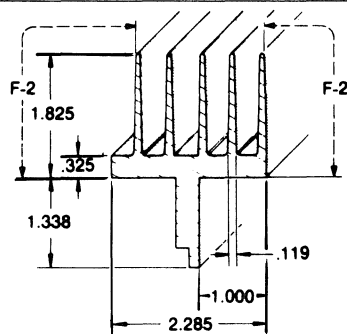
251-1706-00
 COST:^a .199/in STATUS CODE:^a CR WEIGHT (lb/in): .086 ALLOY & TEMPER: 6063-T6 FINISH: F-0 On all surfaces



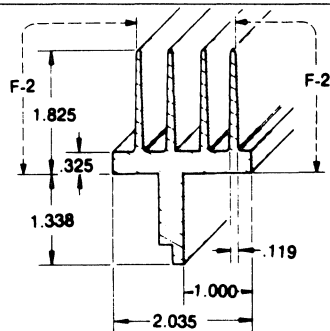
251-1736-00
 COST:^a 4.850/lb STATUS CODE:^a CR ALLOY & TEMPER: 6063-T6 F-1 On all surfaces Safety Controlled

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

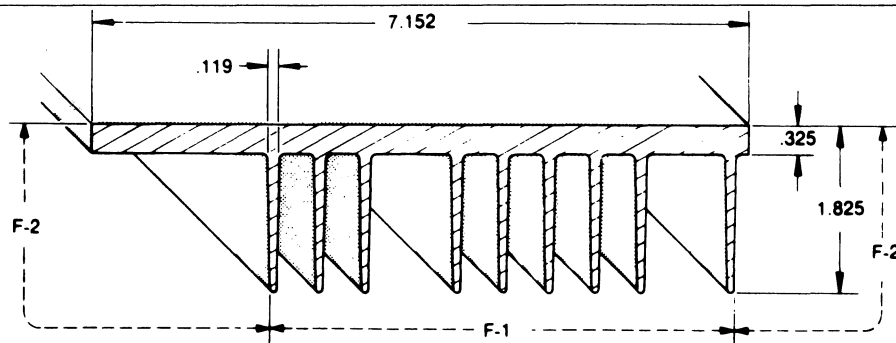
EXTRUSIONS USED FOR HEAT SINKS (cont)



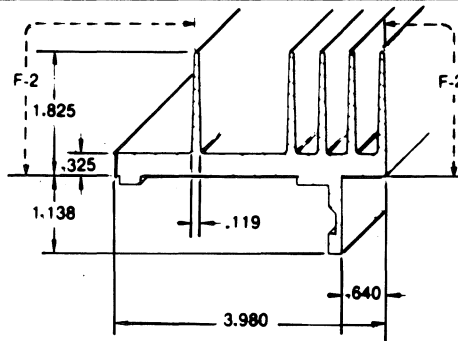
251-1741-00
 COST:^a .456/in STATUS CODE:^a CS WEIGHT (lb/in): .183 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



251-1742-00
 COST:^a .489/in STATUS CODE:^a CS WEIGHT (lb/in): .161 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted



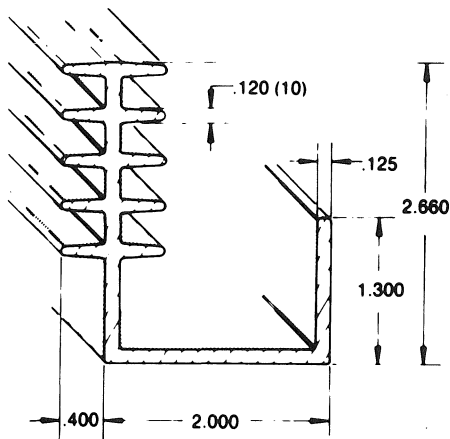
251-1743-00
 COST:^a .678/in STATUS CODE:^a CS WEIGHT (lb/in): .369 ALLOY & TEMPER: 6063-T6 FINISH: F-0 Except as noted



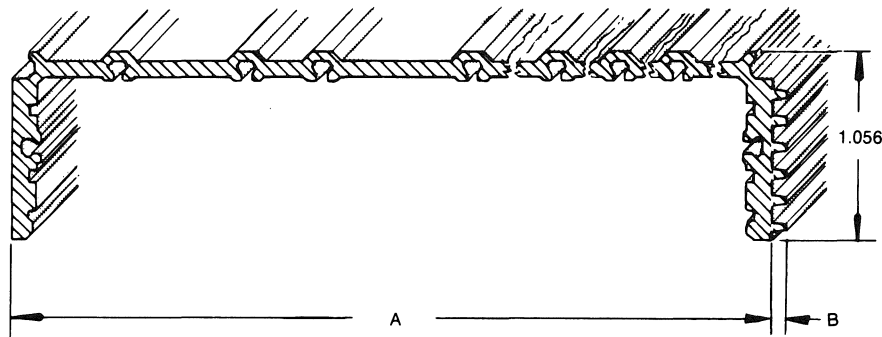
251-1744-00
 COST:^a .403/in STATUS CODE:^a CS WEIGHT (lb/in): .240 ALLOY & TEMPER: 6063-T6 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

EXTRUSIONS USED FOR HEAT SINKS (cont)



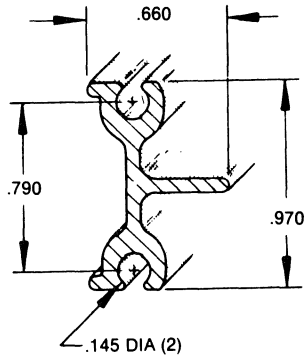
COST:^a .561/in STATUS CODE:^a CR 251-1761-00 WEIGHT (lb/in): .111 ALLOY & TEMPER: 6063-T6



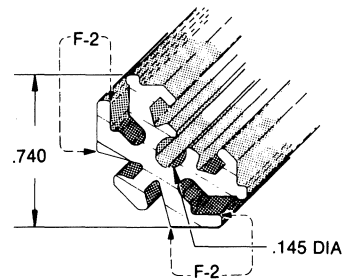
Dimensions		Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
A	B				Cost	ST
5.200	.084	6063-T6	.066	251-1326-00	.119/in	DL
5.200		6063-T6		251-1326-01		CS

^a The nominal price (at time of printing) is listed in the cost column, or as COST. For Status Codes, see tab marked CODES in the back of this catalog.

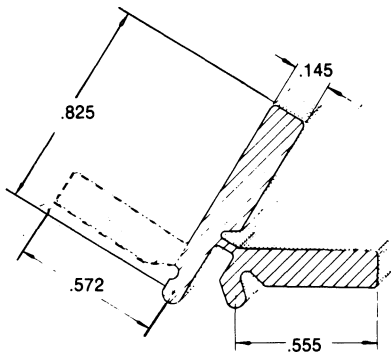
EXTRUSIONS USED FOR MODULAR PACKAGING



251-1471-00
 COST:^a .022/in STATUS CODE:^a CR
 WEIGHT (lb/in): .013 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces

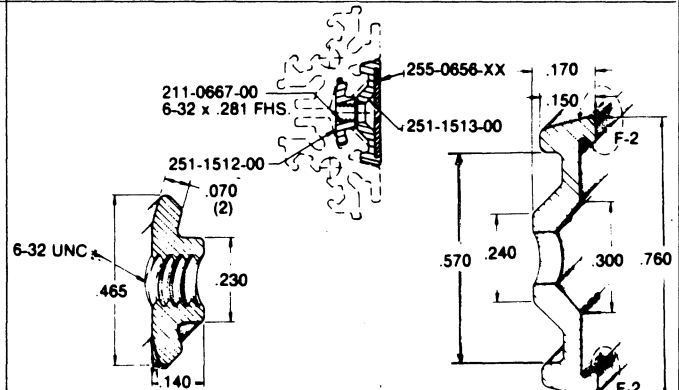


251-1486-01
 COST:^a .059/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6
 F-0 Except as noted



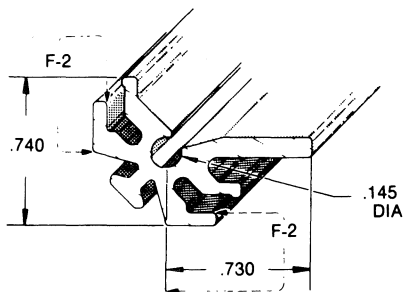
251-1487-00
 STATUS CODE:^a DL
 WEIGHT (lb/in): .019
 ALLOY & TEMPER: 6063-T6

251-1492-00 With dotted portion
 STATUS CODE:^a DL
 WEIGHT (lb/in): .026
 ALLOY & TEMPER: 6063-T6

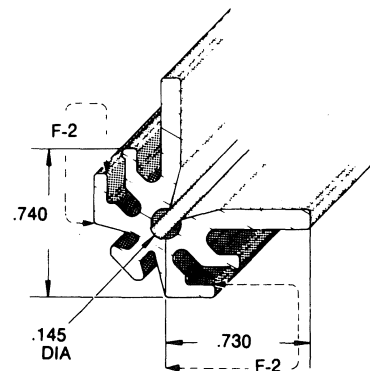


251-1512-00
 COST:^a .024/in
 STATUS CODE:^a CR
 WEIGHT (lb/in): .005
 ALLOY & TEMPER: 6063-T6

251-1513-00
 COST:^a .018/in
 STATUS CODE:^a CR
 WEIGHT (lb/in): .007
 ALLOY & TEMPER: 6063-T6



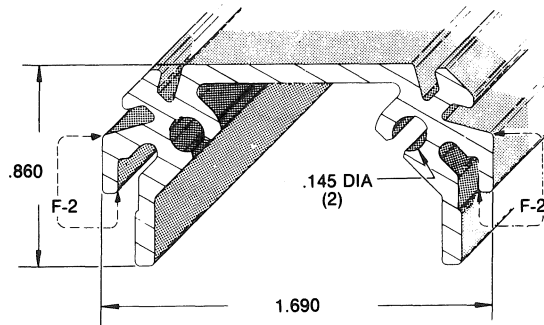
251-1555-00
 COST:^a .061/in STATUS:^a CR
 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



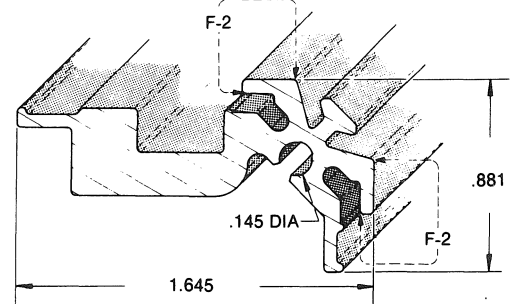
251-1556-00
 COST:^a .095/in STATUS:^a CR
 WEIGHT (lb/in): .028 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

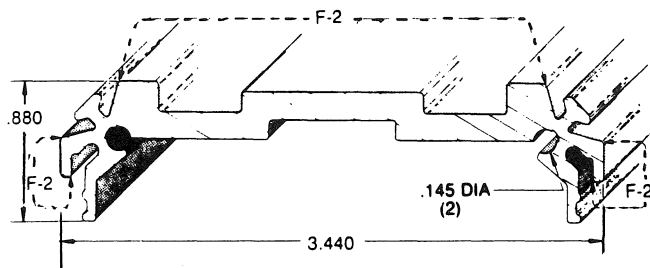
EXTRUSIONS USED FOR MODULAR PACKAGING (cont)



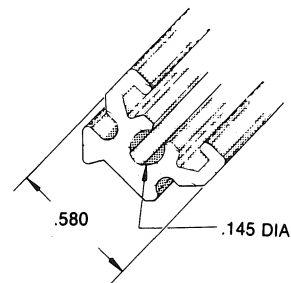
251-1586-00
 COST:^a .127/in STATUS CODE:^a CR
 WEIGHT (lb/in): .036 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



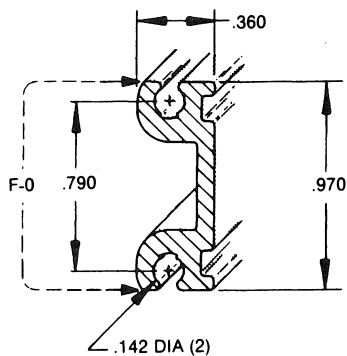
251-1587-00
 COST:^a .144/in STATUS CODE:^a CR
 WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



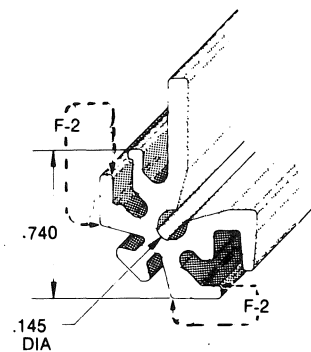
251-1592-00
 COST:^a .271/in STATUS CODE:^a CR
 WEIGHT (lb/in): .086 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



251-1636-00
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6



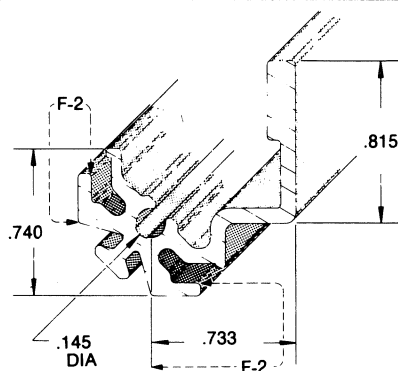
251-1650-00
 COST:^a .271/in STATUS CODE:^a CR
 WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



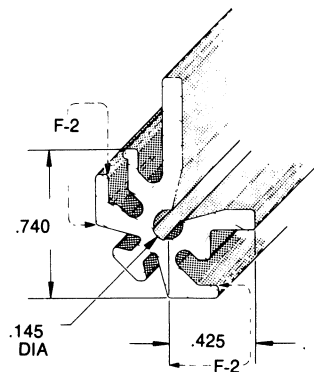
251-1682-00
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

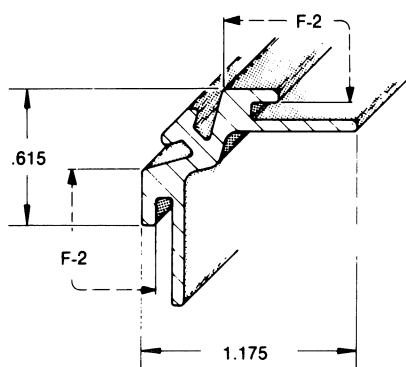
EXTRUSIONS USED FOR MODULAR PACKAGING (cont)



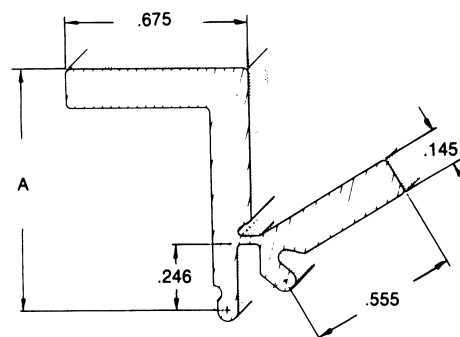
251-1726-00
STATUS CODE:^a DL
ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



251-1730-00
COST:^a .048/in STATUS CODE:^a CR
WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



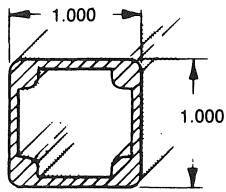
251-1754-00
STATUS CODE:^a DL
ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



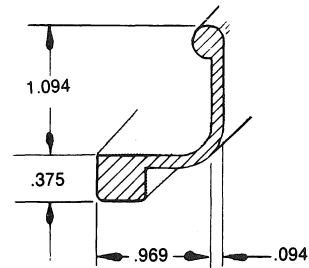
Dimension	Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
				Cost	ST
A					
.803	6063-T6	.028	251-1488-00		DL
.895	6063-T6	.025	251-1552-00		DL

^a The nominal price (at time of printing) is listed in the cost column, or as COST. For Status Codes, see tab marked CODES in the back of this catalog.

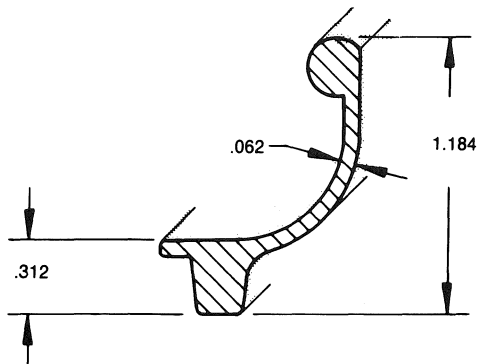
MISCELLANEOUS EXTRUSIONS



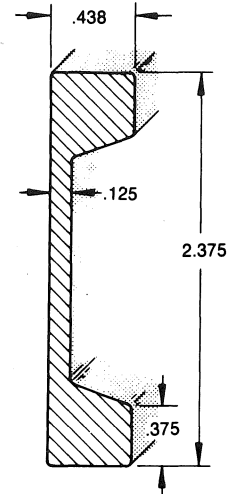
251-0061-00 CHOPPER BODY
 COST:^a .233/in STATUS CODE:^a CR
 WEIGHT (lb/in): .032 ALLOY & TEMPER: 6063-T6



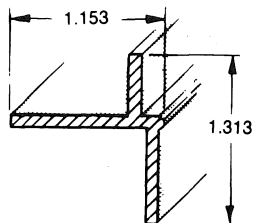
251-0067-00 FRAME SECTION
 STATUS CODE:^a OB
 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6



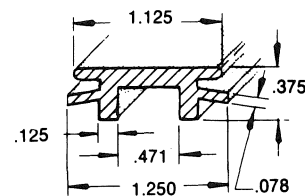
251-0083-00 FRAME SECTION
 STATUS CODE:^a OB
 WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6



251-0088-00 SUPPORT
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



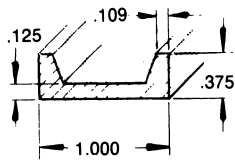
251-0090-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



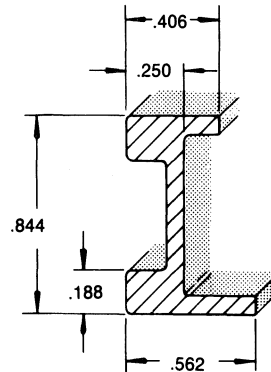
251-0097-00 HANDLE BAR
 COST:^a .016/in STATUS CODE:^a CS
 WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

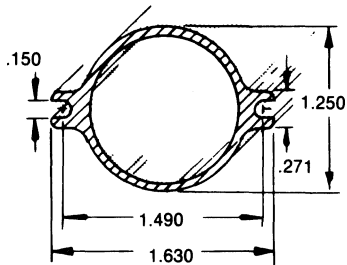
MISCELLANEOUS EXTRUSIONS (cont)



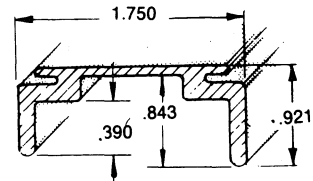
251-0102-00 CHANNEL
 COST:^a .044/in STATUS CODE:^a CR
 WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6



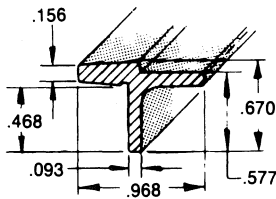
251-0104-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



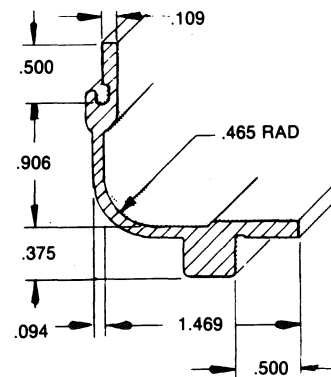
251-0106-00 RING SPACER
 COST:^a .028/in STATUS CODE:^a CS
 WEIGHT (lb/in): .029 ALLOY & TEMPER: 6063-T6



251-0115-00 HANDLE BAR
 STATUS CODE:^a OB
 WEIGHT (lb/in): .039 ALLOY & TEMPER: 6063-T6



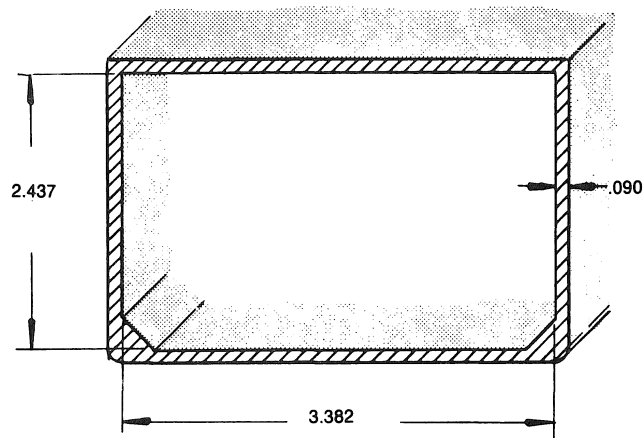
251-0117-00 SUPPORT
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T5



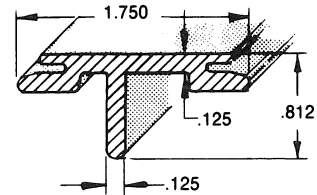
251-0118-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

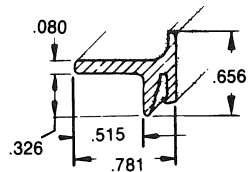
MISCELLANEOUS EXTRUSIONS (cont)



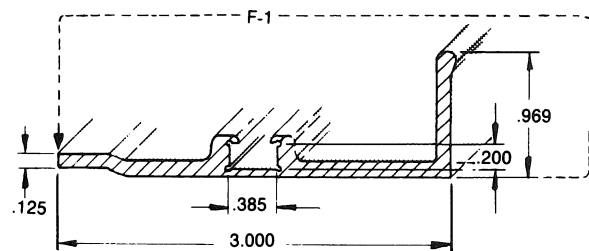
251-0120-00 HOUSING
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T5



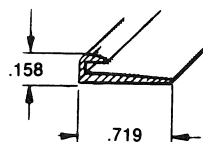
251-0121-00 HANDLE BAR
STATUS CODE:^a OB
WEIGHT (lb/in): .034 ALLOY & TEMPER: 6063-T6



251-0128-00 ANGLE BRACE
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6

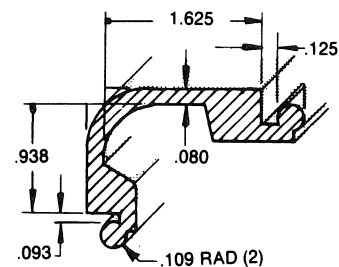


251-0134-00 SCOPEMOBILE GUIDE
COST:^a .124//in STATUS CODE:^a CR
WEIGHT: .052 ALLOY & TEMPER: 6063-T6



251-0137-01 SCOPEMOBILE TRIM, 6.76 Feet Long
COST:^a 2.049/ea STATUS:^a CR
ALLOY & TEMPER: 6063-T42

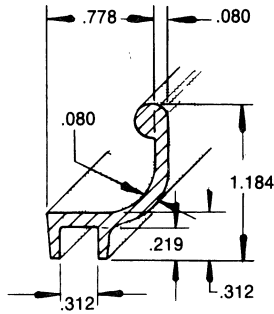
251-0184-01 SCOPEMOBILE TRIM, 7.35 Feet Long
COST:^a 2.236/ea STATUS CODE:^a CR
ALLOY & TEMPER: 6063-T6



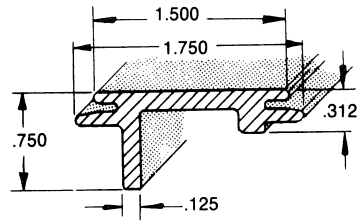
251-0140-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

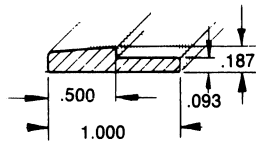
MISCELLANEOUS EXTRUSIONS (cont)



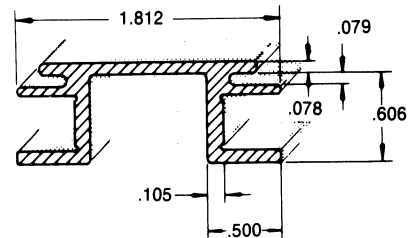
251-0150-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



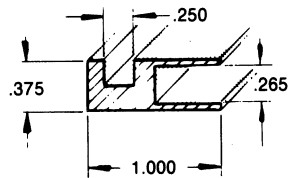
251-0169-00 HANDLE BAR
STATUS CODE:^a OB
WEIGHT (lb/in): .031 ALLOY & TEMPER: 6063-T6



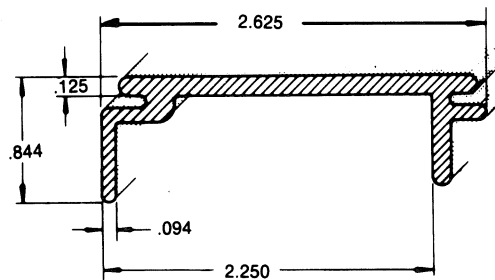
251-0176-00 DECORATIVE TRIM
COST:^a .435/in STATUS CODE:^a CR
WEIGHT (lb/in): .160 ALLOY & TEMPER: 6063-T5



251-0185-00 HANDLE
STATUS CODE:^a OB
WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6



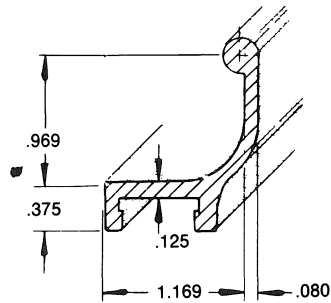
251-0186-00 CHANNEL GUIDE
STATUS CODE:^a OB
WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6



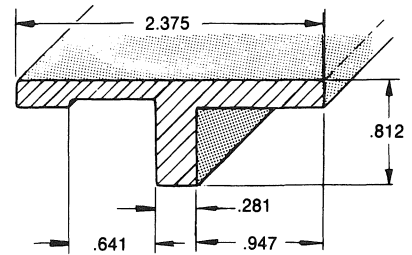
251-0189-00 RAIL ANGLE
COST:^a .071/in STATUS CODE:^a CS
WEIGHT (lb/in): .051 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

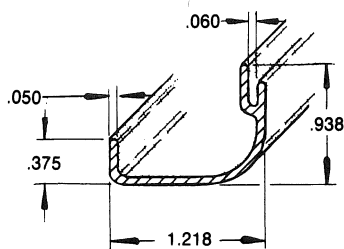
MISCELLANEOUS EXTRUSIONS (cont)



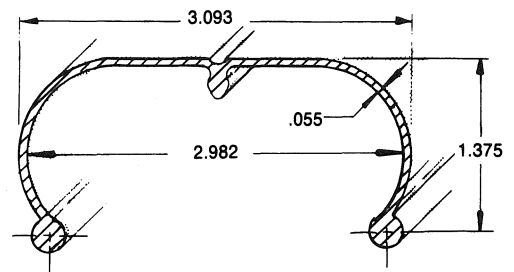
251-0192-00 FRAME SECTION
STATUS CODE:^a OB
WEIGHT (lb/in): .032 ALLOY & TEMPER: 6063-T6



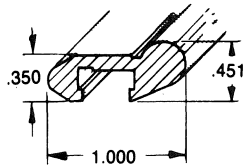
251-0194-00 SUPPORT
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



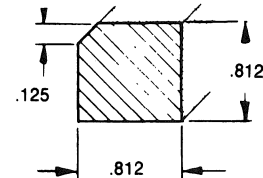
251-0197-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



251-0198-00 BATTERY BOX
STATUS CODE:^a OB
WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6



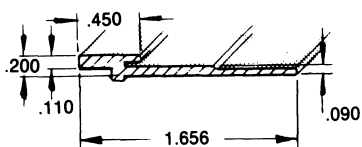
251-0204-00 SLIDE GUIDE
COST:^a .031/in STATUS CODE:^a CR
WEIGHT (lb/in): .031 ALLOY & TEMPER: 6063-T6



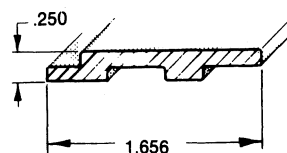
251-0206-00
COST:^a .810/lb STATUS CODE:^a CS
ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

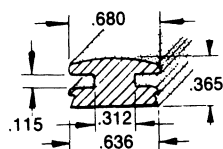
MISCELLANEOUS EXTRUSIONS (cont)



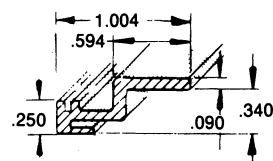
251-0216-00 FRAME SECTION
 COST:^a .021/in STATUS CODE:^a CR
 WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6



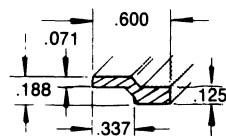
251-0217-00 FRAME SECTION
 COST:^a .032/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6



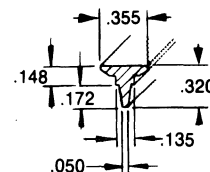
251-0218-00 HANDLE
 COST:^a .902/in STATUS CODE:^a CR
 WEIGHT (lb/in): .015 ALLOY & TEMPER: 6063-T6



251-0219-00 RAIL ANGLE
 COST:^a .021/in STATUS CODE:^a CR
 WEIGHT (lb/in): .012 ALLOY & TEMPER: 6063-T6



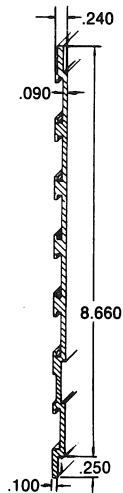
251-0228-00 GUIDE
 COST:^a .316/in STATUS CODE:^a CR
 WEIGHT (lb/in): .006 ALLOY & TEMPER: 6063-T6



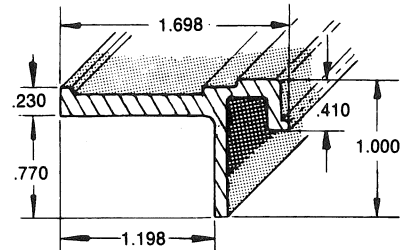
251-0234-00 TRIM STRIP
 STATUS CODE:^a OB
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

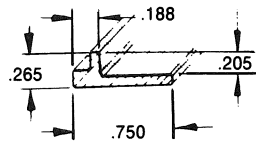
MISCELLANEOUS EXTRUSIONS (cont)



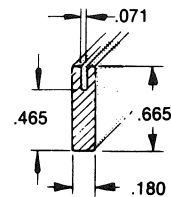
251-0239-00 SCOPE COVER
 COST:^a .073/in STATUS CODE:^a CS
 WEIGHT (lb/in): .113 ALLOY & TEMPER: 6063-T6



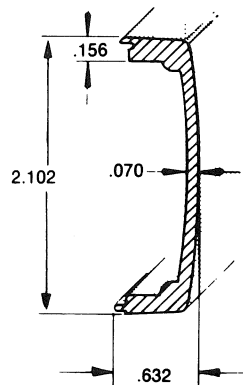
251-0240-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



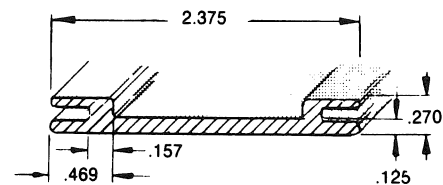
251-0252-00 NUT PLATE
 COST:^a .069/in STATUS CODE:^a CR
 WEIGHT (lb/in): .007 ALLOY & TEMPER: 6063-T5



251-0257-00 FRAME SECTION
 COST:^a .013/in STATUS CODE:^a CS
 WEIGHT (lb/in): .011 ALLOY & TEMPER: 6063-T6



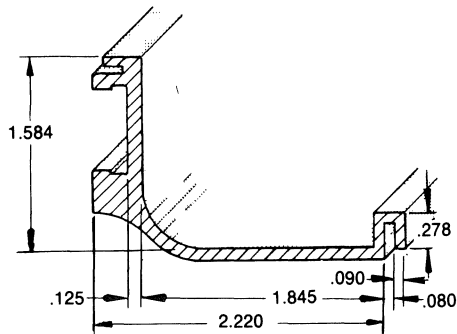
251-0258-00 COVER
 COST:^a 2.350/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6061-T6



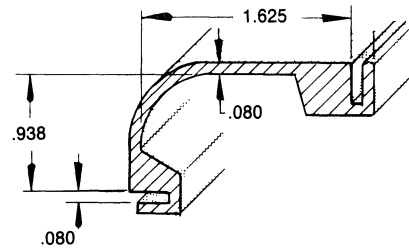
251-0260-00 TILT LOCK SUPPORT
 STATUS CODE:^a OB
 WEIGHT (lb/in): .036 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

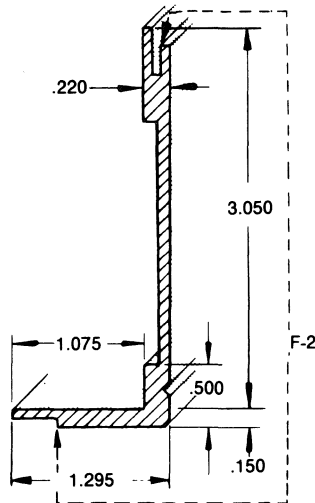
MISCELLANEOUS EXTRUSIONS (cont)



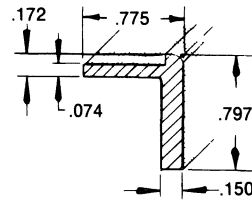
251-0261-00 FRAME SECTION
STATUS CODE:^a OB
WEIGHT (lb/in): .050 ALLOY & TEMPER: 6063-T6



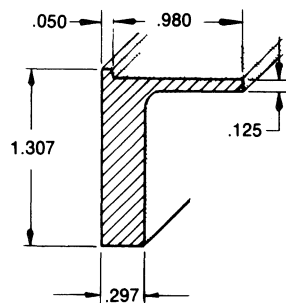
251-0262-00 FRAME SECTION
STATUS CODE:^a OB
WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6



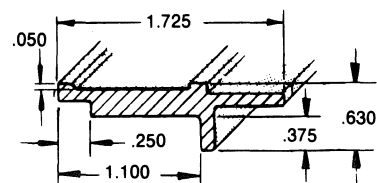
251-0264-00 FRAME SECTION
COST:^a .158/in STATUS CODE:^a CR
WEIGHT (lb/in): .055 ALLOY & TEMPER: 6063-T6
FINISH: F-0 Except as noted



251-0265-00 FRAME SPACER
COST:^a .040/in STATUS CODE:^a CR
WEIGHT (lb/in): .016 ALLOY & TEMPER: 6063-T6



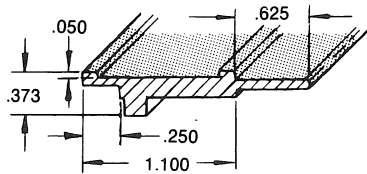
251-0266-00 ANGLE BRACKET
COST:^a .102/in STATUS CODE:^a CR
WEIGHT (lb/in): .042 ALLOY & TEMPER: 6063-T6



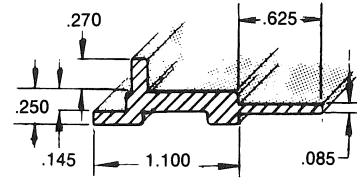
251-0267-00 FRAME SECTION
COST:^a .071/in STATUS CODE:^a CR
WEIGHT (lb/in): .030 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

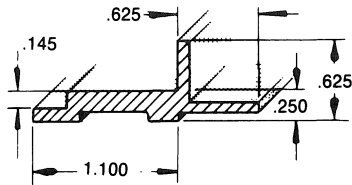
MISCELLANEOUS EXTRUSIONS (cont)



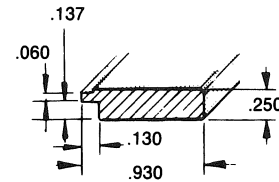
251-0268-00 FRAME SECTION
 COST:^a .241/in STATUS CODE:^a CR
 WEIGHT (lb/in): .026 ALLOY & TEMPER: 6063-T6



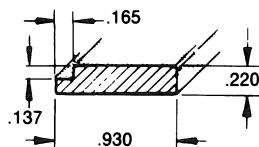
251-0269-00 FRAME SECTION
 COST:^a .242/in STATUS CODE:^a CR
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



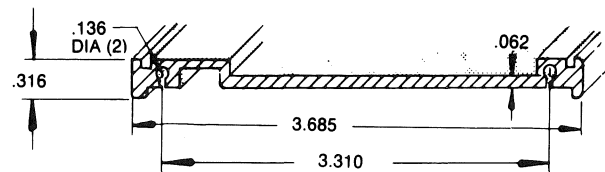
251-0270-00 FRAME SECTION
 COST:^a .238/in STATUS CODE:^a CR
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



251-0275-00 FRAME SECTION
 COST:^a .193/in STATUS CODE:^a CR
 WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6



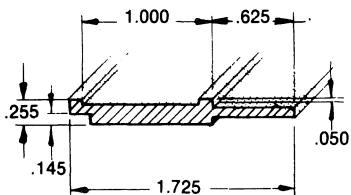
251-0276-00 FRAME SECTION
 COST:^a .085/in STATUS CODE:^a CR
 WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6



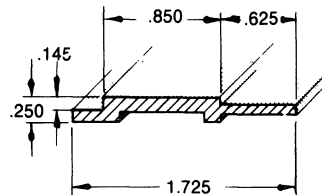
251-0277-00 FRAME SECTION
 COST:^a .938/in STATUS CODE:^a CS
 WEIGHT (lb/in): .032 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

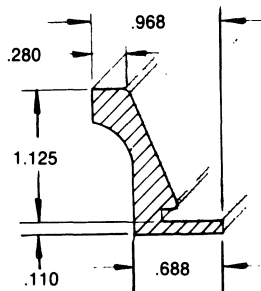
MISCELLANEOUS EXTRUSIONS (cont)



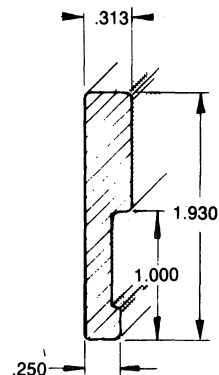
251-0278-00 FRAME SECTION
 COST:^a .041/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6



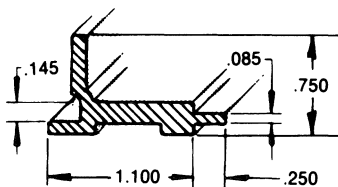
251-0279-00 FRAME SECTION
 COST:^a .026/in STATUS CODE:^a CR
 WEIGHT (lb/in): .015 ALLOY & TEMPER: 6063-T6



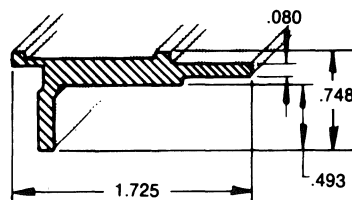
251-0282-00 HINGE HALF
 COST:^a .052/in STATUS CODE:^a CR
 WEIGHT (lb/in): .033 ALLOY & TEMPER: 6061-T6



251-0283-00 HINGE HALF
 COST:^a .083/in STATUS CODE:^a CR
 WEIGHT (lb/in): .050 ALLOY & TEMPER: 6063-T6



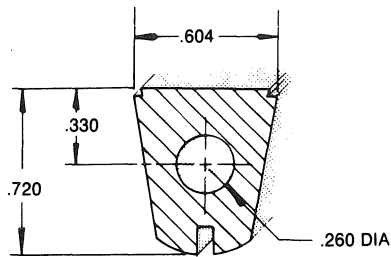
251-0290-00 FRAME SECTION
 COST:^a .080/in STATUS CODE:^a CR
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



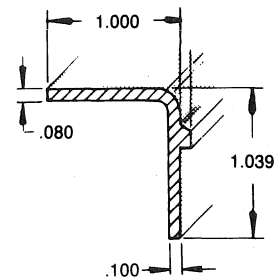
251-0291-00 FRAME SECTION
 COST:^a .088/in STATUS CODE:^a CR
 WEIGHT (lb/in): .030 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

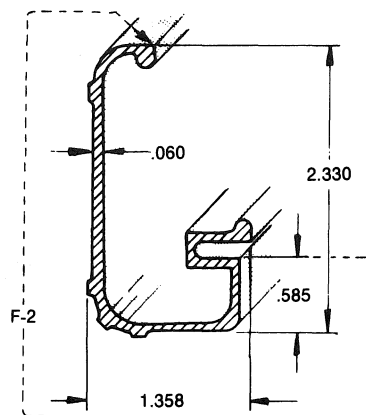
MISCELLANEOUS EXTRUSIONS (cont)



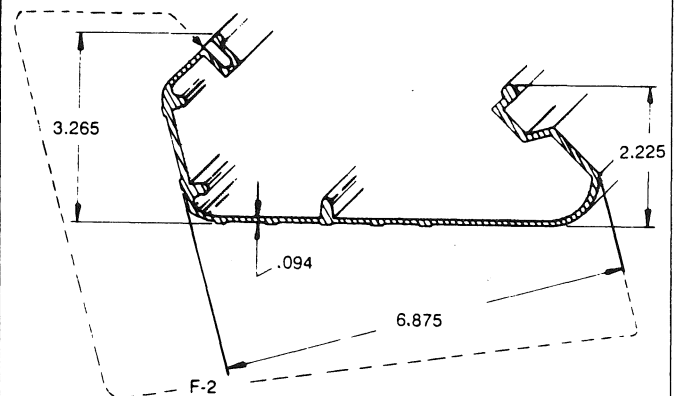
251-0292-00 HANDLE
STATUS CODE:^a OB
ALLOY & TEMPER: 6061-T6



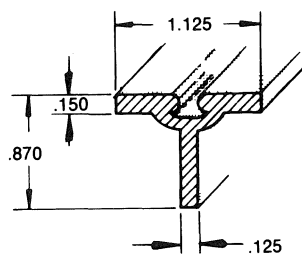
251-0298-00 ANGLE BRACKET
COST:^a .009/in STATUS CODE:^a CS
WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6



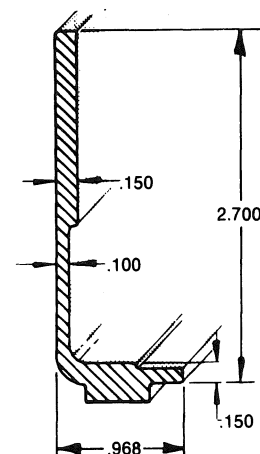
251-0299-00 DOLLY FRAME
COST:^a .095/in STATUS CODE:^a CS
WEIGHT (lb/in): .039 ALLOY & TEMPER: 6063-T6
FINISH: F-0 Except as noted



251-0300-00 DOLLY FRAME
COST:^a .394/in STATUS CODE:^a CS
WEIGHT (lb/in): .158 ALLOY & TEMPER: 6063-T52
FINISH: F-0 Except as noted



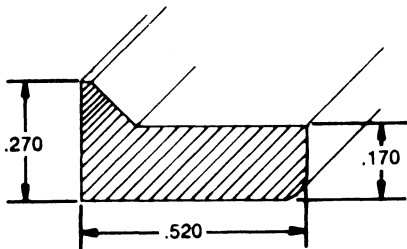
251-1009-00 FRAME SECTION
COST:^a .042/in STATUS CODE:^a OT
WEIGHT (lb/in): .028 ALLOY & TEMPER: 6063-T6



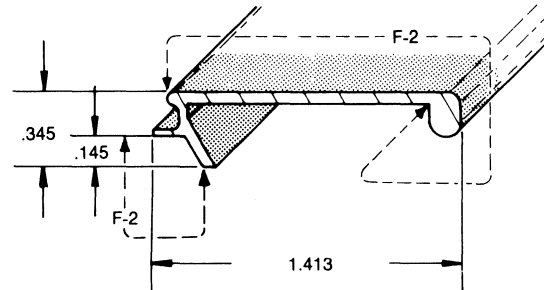
251-1010-00 FRAME SECTION
COST:^a .098/in STATUS CODE:^a CS
WEIGHT (lb/in): .047 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

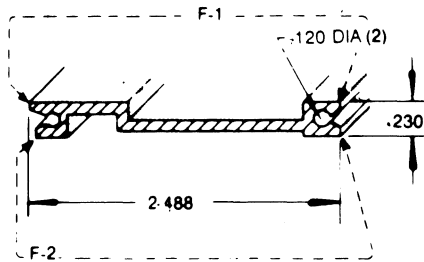
MISCELLANEOUS EXTRUSIONS (cont)



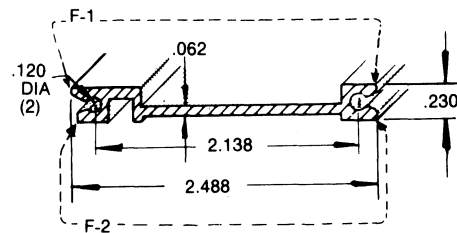
251-1014-00 FRAME SECTION
COST:^a 2.170/lb STATUS CODE:^a EN
ALLOY & TEMPER: 6063-T6



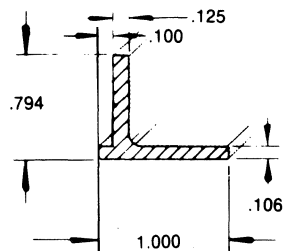
251-1021-01 PANEL DOOR
COST:^a .018/in STATUS CODE:^a CS
WEIGHT (lb/in): .010 ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



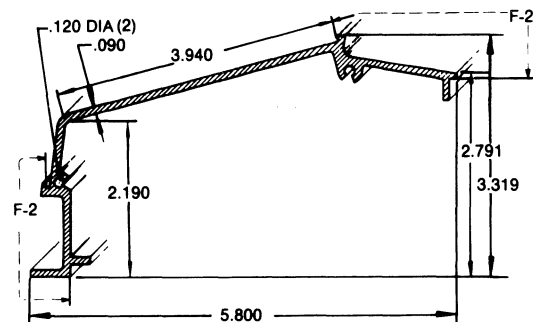
251-1023-00 FRAME SECTION
COST:^a .072/in STATUS CODE:^a CR
WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6



251-1024-00 FRAME SECTION
COST:^a .065/in STATUS CODE:^a CR
WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6



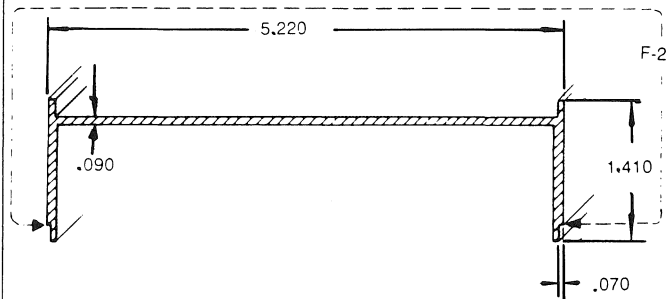
251-1033-00 ANGLE BRACKET
COST:^a .082/in STATUS CODE:^a CR
WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T5



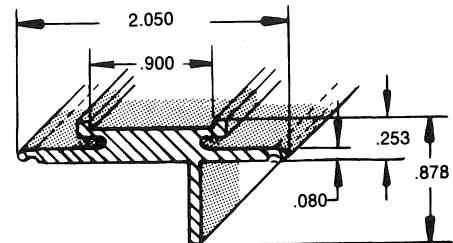
251-1034-00 FRAME SECTION
COST:^a .480/in STATUS CODE:^a CR
WEIGHT (lb/in): .091 ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

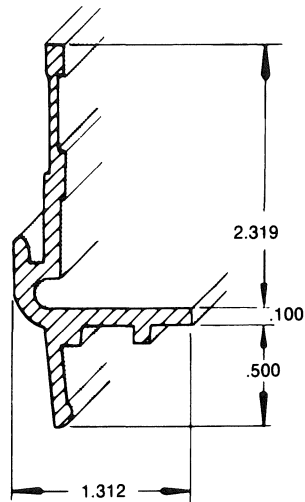
MISCELLANEOUS EXTRUSIONS (cont)



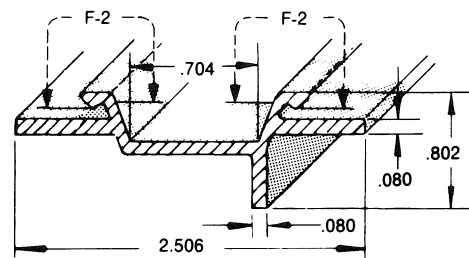
251-1035-00 FRAME SECTION
 COST:^a .263/in STATUS CODE:^a CR
 WEIGHT (lb/in): .084 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



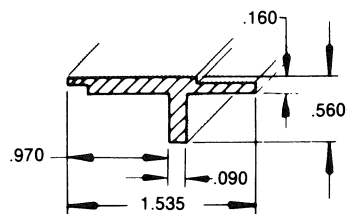
251-1037-00 FRAME SECTION
 COST:^a .094/in STATUS CODE:^a CR
 WEIGHT (lb/in): .040 ALLOY & TEMPER: 6063-T6



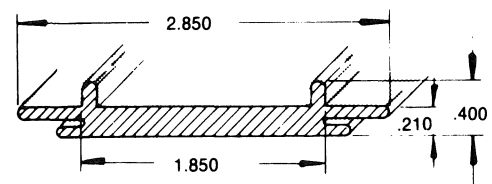
251-1041-00 FRAME SECTION
 STATUS CODE:^a OB



251-1042-00 FRAME SECTION
 COST:^a .066/in STATUS CODE:^a CR
 WEIGHT (lb/in): .027 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



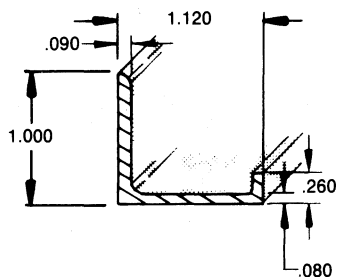
251-1043-00 FRAME SECTION
 COST:^a .055/in STATUS CODE:^a CR
 WEIGHT (lb/in): .024 ALLOY & TEMPER: 6063-T6



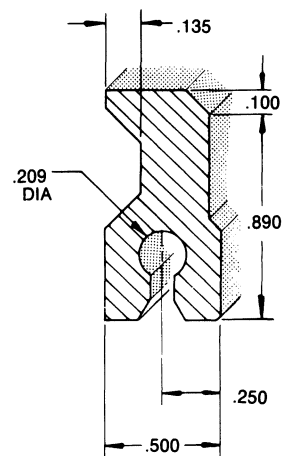
251-1044-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

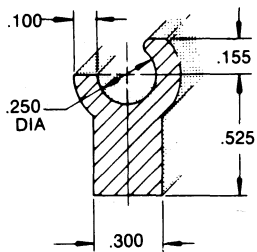
MISCELLANEOUS EXTRUSIONS (cont)



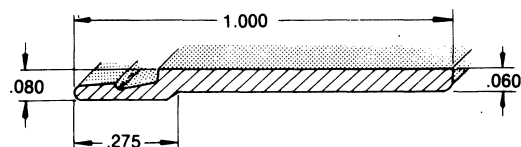
251-1046-00 HANDLE SECTION
 COST:^a .048/in STATUS CODE:^a CR
 WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6



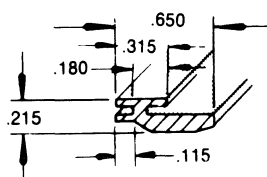
251-1052-00 TRANSFORMER SLIDE
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



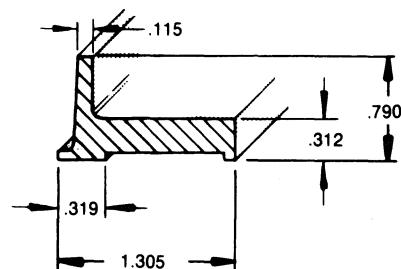
251-1060-00 HINGE HALF
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



251-1064-00 SHIELD GASKET RETAINER
 COST:^a .026/in STATUS CODE:^a CR
 WEIGHT (lb/in): .006 ALLOY & TEMPER: 6063-T6



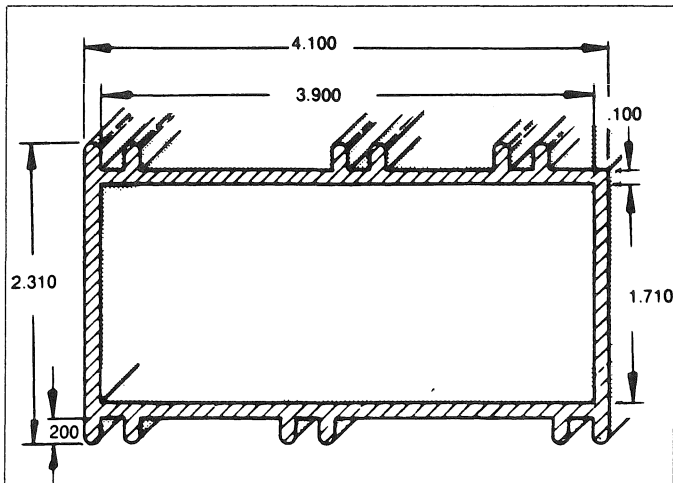
251-1065-00 FRAME SECTION
 COST:^a .011/in STATUS CODE:^a CS
 WEIGHT (lb/in): .006 ALLOY & TEMPER: 6063-T6



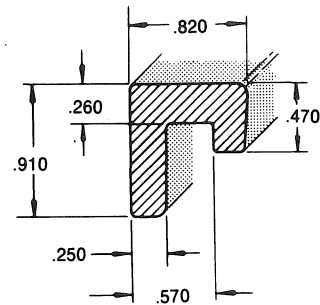
251-1067-00 ANGLE BRACKET
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

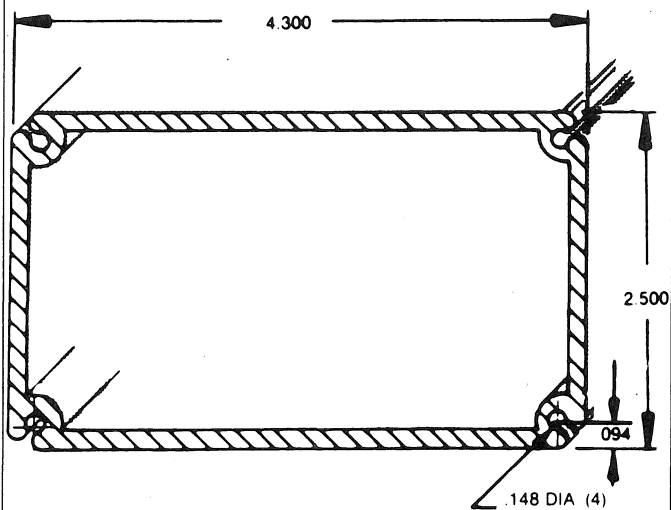
MISCELLANEOUS EXTRUSIONS (cont)



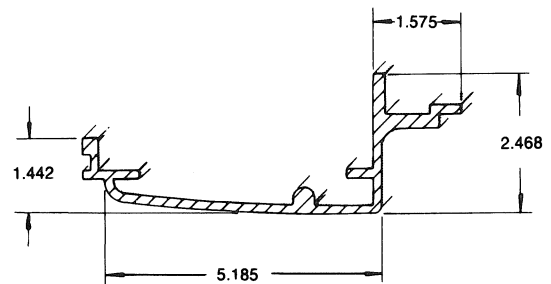
251-1068-00 HOUSING
 COST:^a .259/in STATUS CODE:^a OT
 WEIGHT (lb/in): .139 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



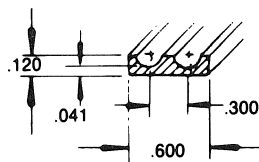
251-1069-00 PANEL BRACKET
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



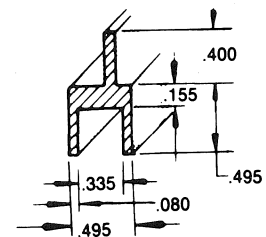
251-1070-00 FRAME SECTION
 COST:^a .203/in STATUS CODE:^a CR
 WEIGHT (lb/in): .129 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



251-1071-00 TERMINAL PANEL
 STATUS CODE:^a OB
 WEIGHT (lb/in): .206 ALLOY & TEMPER: 6063-T6



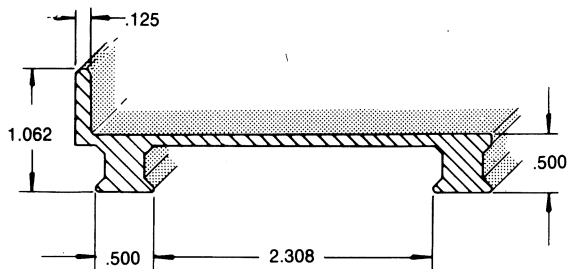
251-1072-00 TRANSFORMER COVER HALF
 COST:^a .010/in STATUS CODE:^a CR
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6



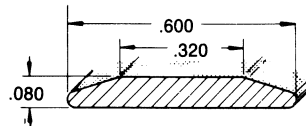
251-1073-00 CIRCUIT BOARD SUPPORT
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

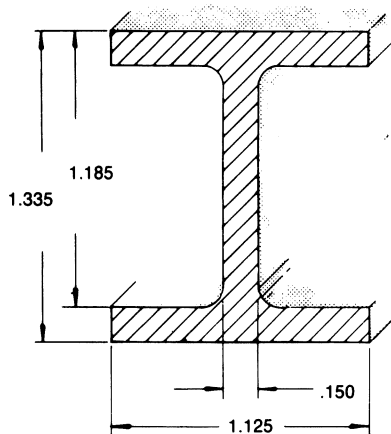
MISCELLANEOUS EXTRUSIONS (cont)



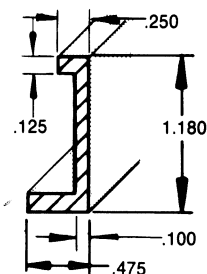
251-1074-00 TRANSFORMER SUPPORT
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



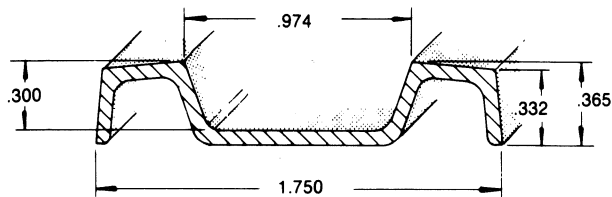
251-1076-00 GASKET RETAINER SHIELD
COST:^a .028/in STATUS CODE:^a CR
WEIGHT (lb/in): .004 ALLOY & TEMPER: 6063-T6



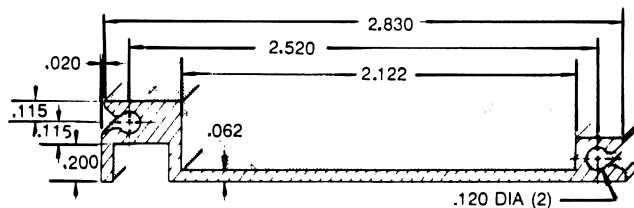
251-1077-00 SUPPORT BAR
STATUS CODE:^a OB
WEIGHT (lb/in): .052 ALLOY & TEMPER: 6063-T6



251-1078-00 CONNECTOR BOARD SUPPORT
COST:^a .034/in STATUS CODE:^a CR
WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6



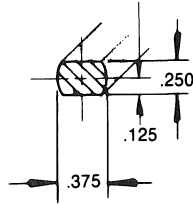
251-1079-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



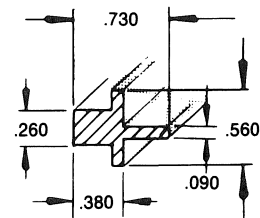
251-1085-00 FRAME SECTION
COST:^a .057/in STATUS CODE:^a CR
WEIGHT (lb/in): .027 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

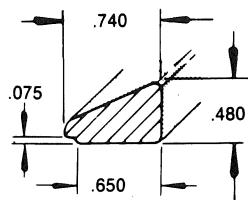
MISCELLANEOUS EXTRUSIONS (cont)



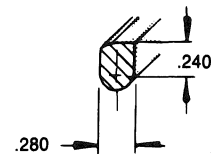
251-1088-01 HOLD DOWN
 COST:^a .051/in STATUS CODE:^a CR
 WEIGHT (lb/in): .009 ALLOY & TEMPER: 6061-T6
 FINISH: F-0 On all surfaces



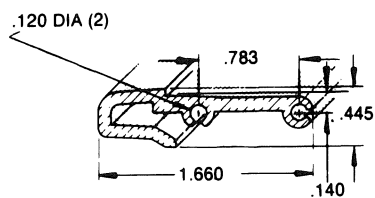
251-1089-00 FRAME SECTION
 COST:^a .054/in STATUS CODE:^a CR
 WEIGHT (lb/in): .015 ALLOY & TEMPER: 6063-T6



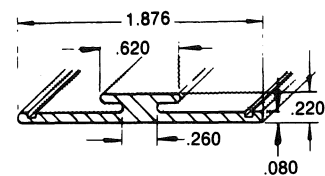
251-1094-00 CAMERA HANDLE
 COST:^a 2.580/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6



251-1097-00 CAMERA LATCH
 COST:^a .040/in STATUS CODE:^a CR
 WEIGHT (lb/in): .011 ALLOY & TEMPER: 6061-T6



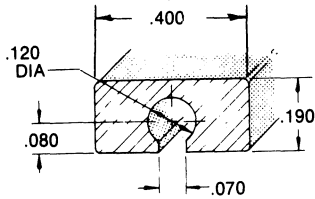
251-1098-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



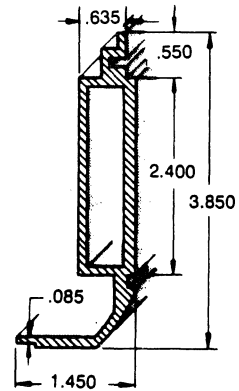
251-1105-00 FRAME SECTION
 COST:^a .080/in STATUS CODE:^a CR
 WEIGHT (lb/in): .021 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

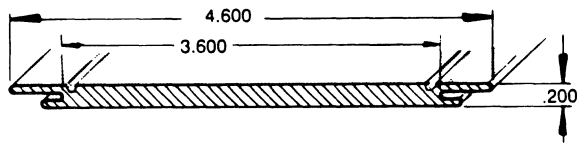
MISCELLANEOUS EXTRUSIONS (cont)



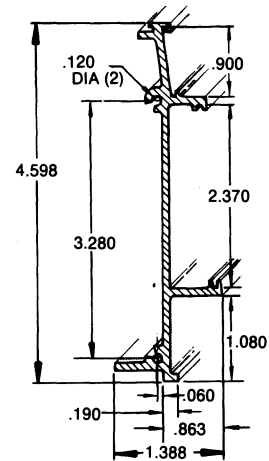
251-1108-00 NUT BLOCK
STATUS CODE:^a OB
WEIGHT (lb/in): .006 ALLOY & TEMPER: 6063-T6



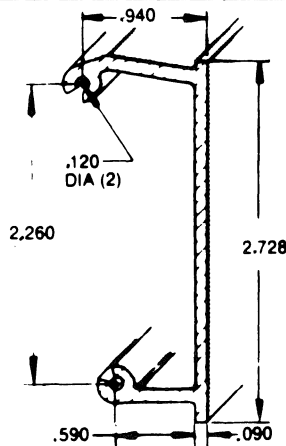
251-1111-00 FRAME SECTION
STATUS CODE:^a OB
WEIGHT (lb/in): .101 ALLOY & TEMPER: 6063-T6



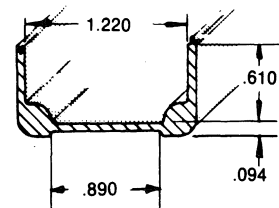
251-1112-00 FRAME SECTION
STATUS CODE:^a DL
WEIGHT (lb/in): .080 ALLOY & TEMPER: 6063-T6



251-1114-00 FRAME SECTION
COST:^a 1.029/in STATUS CODE:^a CR
WEIGHT (lb/in): .069 ALLOY & TEMPER: 6063-T6



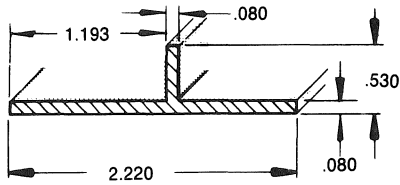
251-1115-00 FRAME SECTION
COST:^a .177/in STATUS CODE:^a CR
WEIGHT (lb/in): .052 ALLOY & TEMPER: 6063-T6



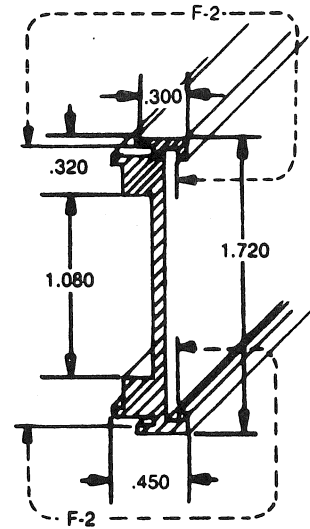
251-1117-00 CHANNEL SHIELD
COST:^a 1.910/lb STATUS CODE:^a CR
ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

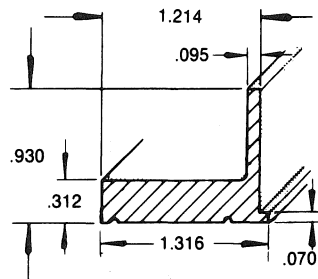
MISCELLANEOUS EXTRUSIONS (cont)



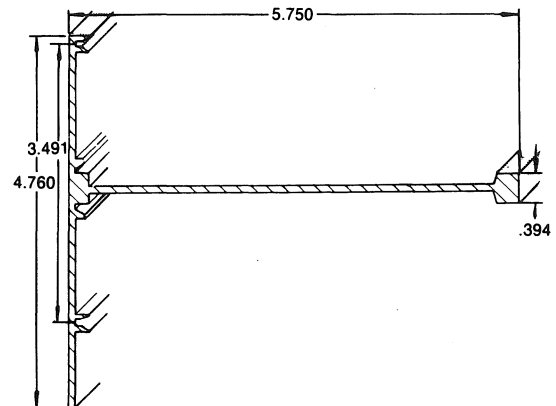
251-1120-00 FRAME SECTION
STATUS CODE:^a OB
WEIGHT (lb/in): .021 ALLOY & TEMPER: 6063-T6



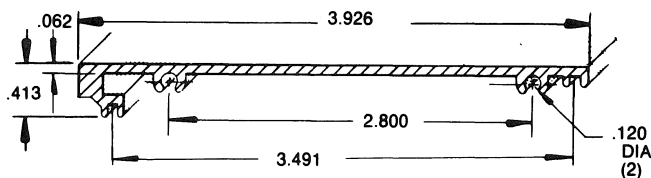
251-1123-00 FRAME SECTION
STATUS CODE:^a NP
ALLOY & TEMPER: 6061-T6
FINISH: F-1 Except as noted



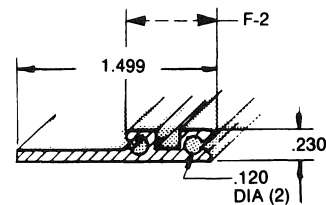
251-1124-00 ANGLE BRACKET
STATUS CODE:^a DL
WEIGHT (lb/in): .044 ALLOY & TEMPER: 6063-T6



251-1126 FRAME SECTION
COST:^a .446/in STATUS CODE:^a CS
WEIGHT (lb/in): .118 ALLOY & TEMPER: 6063-T6
FINISH: F-1 On all surfaces



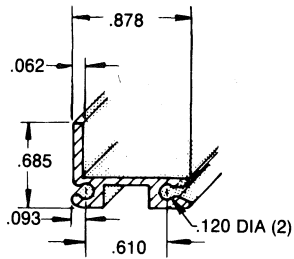
251-1127-00 FRAME SECTION
COST:^a .063/in STATUS CODE:^a CS
WEIGHT (lb/in): .035 ALLOY & TEMPER: 6063-T6



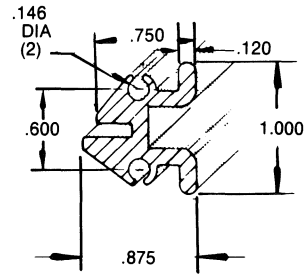
251-1131-00 CIRCUIT BOARD CONNECTOR SUPPORT
COST:^a .102/in STATUS CODE:^a CR
WEIGHT (lb/in): .014 ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

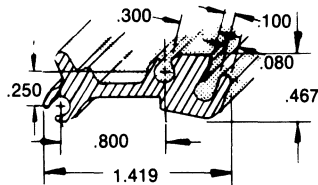
MISCELLANEOUS EXTRUSIONS (cont)



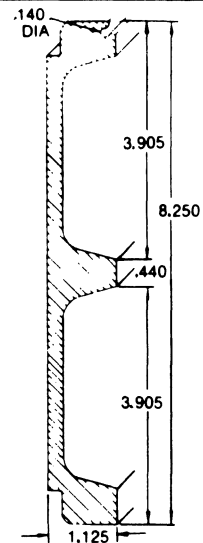
251-1132-00 SLIDE GUIDE
 COST:^a .037/in STATUS CODE:^a CR
 WEIGHT (lb/in): .013 ALLOY & TEMPER: 6063-T6



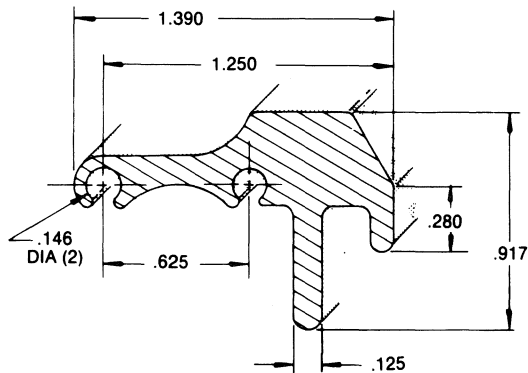
251-1135-00 FRAME SECTION
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6



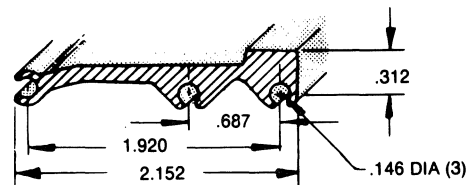
251-1137-00 FRAME SECTION
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6



251-1138-00 FRAME SECTION
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6



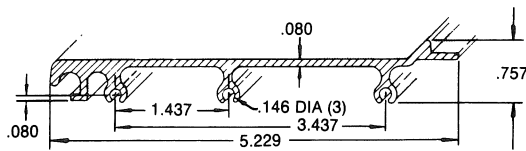
251-1140-01 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



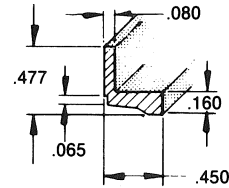
251-1141-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

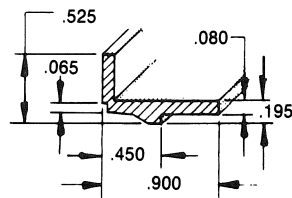
MISCELLANEOUS EXTRUSIONS (cont)



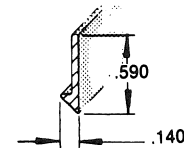
251-1142-00 FRAME SECTION
STATUS CODE:^a DL
ALLOY & TEMPER: 6063-T6



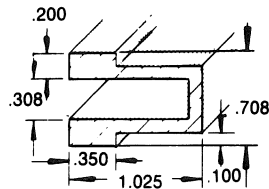
251-1146-00 ELECTRICAL SHIELD SUPPORT
COST:^a .010/in STATUS CODE:^a CR
WEIGHT (lb/in): .006 ALLOY & TEMPER: 6063-T6



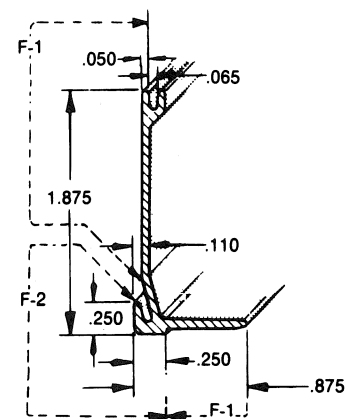
251-1147-00 SUPPORT
COST:^a .128/in STATUS CODE:^a CR
WEIGHT (lb/in): .011 ALLOY & TEMPER: 6063-T6



251-1149-00 BACKING PLATE
STATUS CODE:^a OB
WEIGHT (lb/in): .003 ALLOY & TEMPER: 6063-T6



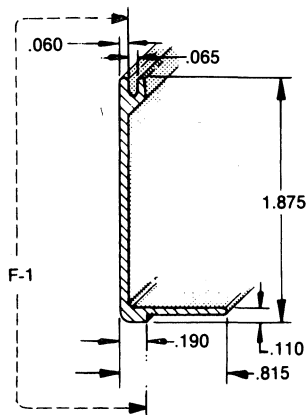
251-1150-00 LATCH HOUSING
STATUS CODE:^a OB
WEIGHT (lb/in): .029 ALLOY & TEMPER: 6063-T6



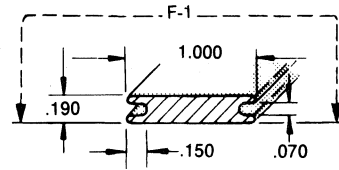
251-1151-00 FRAME SECTION
COST:^a .058/in STATUS CODE:^a CR
WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

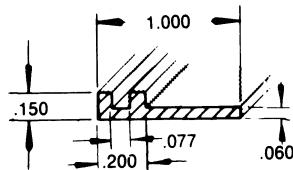
MISCELLANEOUS EXTRUSIONS (cont)



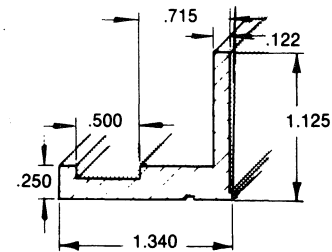
251-1152-00 FRAME SECTION
 COST:^a .042/in STATUS CODE:^a CR
 WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



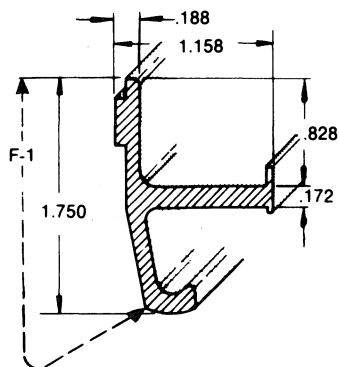
251-1153-00 FRAME SECTION
 COST:^a .044/in STATUS CODE:^a CR
 WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



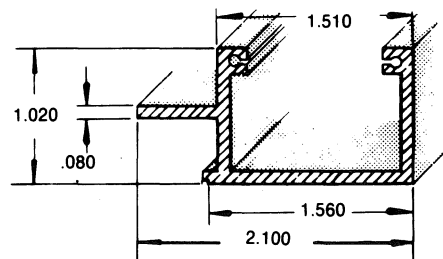
251-1154-00 CIRCUIT BOARD SUPPORT
 COST:^a .016/in STATUS CODE:^a CR
 WEIGHT (lb/in): .007 ALLOY & TEMPER: 6063-T6



251-1155-00 RACK MOUNT BRACKET
 COST:^a .053/in STATUS CODE:^a CS
 WEIGHT (lb/in): .042 ALLOY & TEMPER: 6063-T6



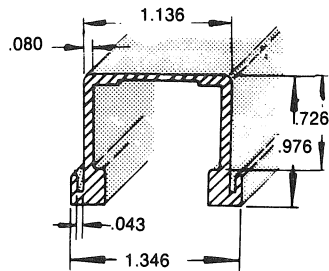
251-1156-00 RACK MOUNT BRACKET
 COST:^a .102/in STATUS CODE:^a CR
 WEIGHT (lb/in): .043 ALLOY & TEMPER: 6063-T6
 FINISH: F-2 Except as noted



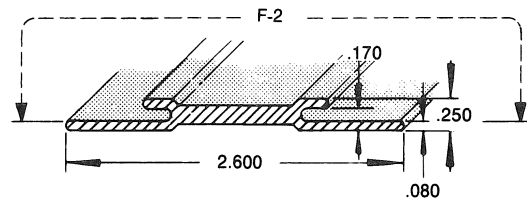
251-1158-00 FRAME SECTION
 COST:^a .129/in STATUS CODE:^a CR
 WEIGHT (lb/in): .034 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

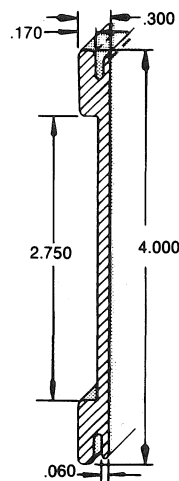
MISCELLANEOUS EXTRUSIONS (cont)



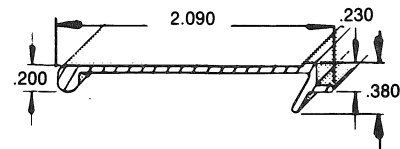
251-1161-00 COVER BRACKET
 COST:^a .065/in STATUS CODE:^a CS
 WEIGHT (lb/in): .029 ALLOY & TEMPER: 6063-T6



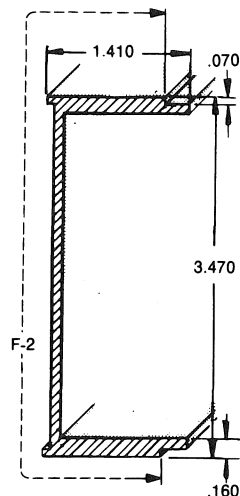
251-1162-00 FRAME SECTION
 COST:^a .067/in STATUS CODE:^a CR
 WEIGHT (lb/in): .031 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



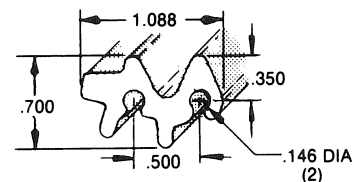
251-1163-00 FRAME SECTION
 COST:^a .222/in STATUS CODE:^a CR
 WEIGHT (lb/in): .062 ALLOY & TEMPER: 6063-T6



251-1164-00 FRAME SECTION
 COST:^a .048/in STATUS CODE:^a CR
 WEIGHT (lb/in): .016 ALLOY & TEMPER: 6063-T6



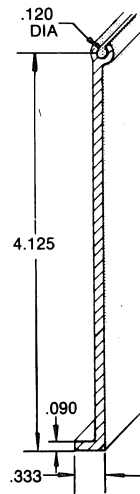
251-1170-00 FRAME SECTION
 COST:^a .121/in STATUS CODE:^a CR
 WEIGHT (lb/in): .067 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



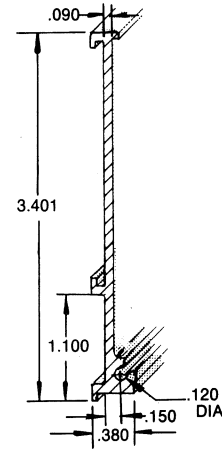
251-1173-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

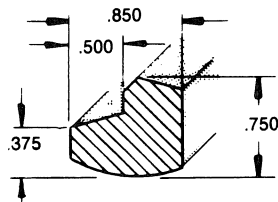
MISCELLANEOUS EXTRUSIONS (cont)



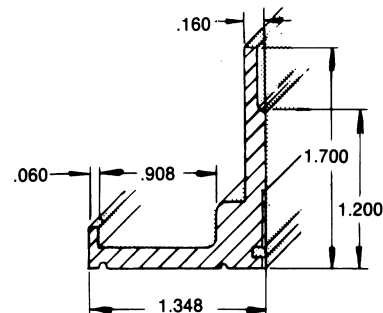
251-1174-00 CIRCUIT BOARD COVER
 COST:^a .058/in STATUS CODE:^a CS
 WEIGHT (lb/in): .042 ALLOY & TEMPER: 6063-T6



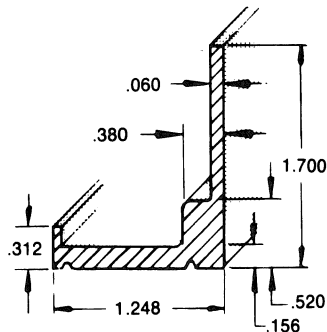
251-1175-00 FRAME SECTION
 COST:^a .044/in STATUS CODE:^a CS
 WEIGHT (lb/in): .034 ALLOY & TEMPER: 6063-T6



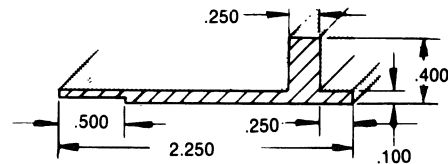
251-1176-00 CRT PAD
 COST:^a .108/in STATUS CODE:^a OT
 WEIGHT (lb/in): .044 ALLOY & TEMPER: 6063-T6



251-1182-00 ANGLE BRACKET
 COST:^a .087/in STATUS CODE:^a CR
 WEIGHT (lb/in): .049 ALLOY & TEMPER: 6063-T6



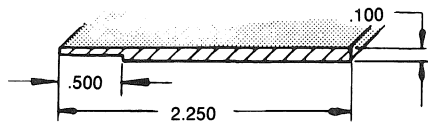
251-1183-00 ANGLE BRACKET
 COST:^a .186/in STATUS CODE:^a CR
 WEIGHT (lb/in): .040 ALLOY & TEMPER: 6063-T6



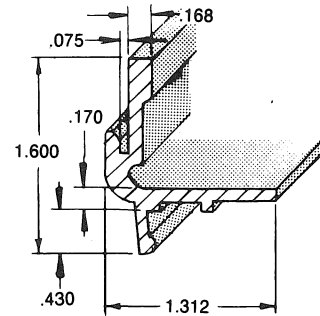
251-1184-00 FRAME SECTION
 COST:^a 2.230/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

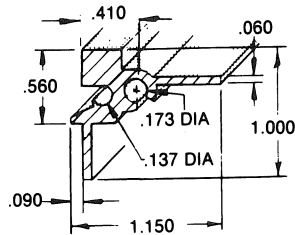
MISCELLANEOUS EXTRUSIONS (cont)



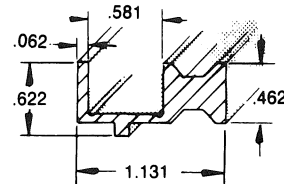
251-1185-00 FRAME SECTION
 COST:^a .057/in STATUS CODE:^a CR
 WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6



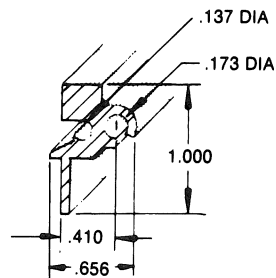
251-1189-00 FRAME SECTION
 COST:^a .041/in STATUS CODE:^a CR
 WEIGHT (lb/in): .028 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



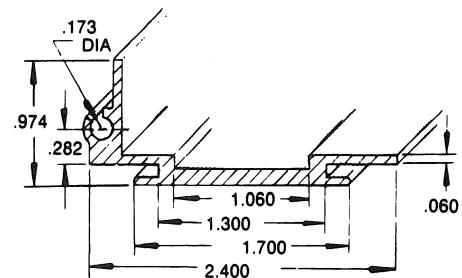
251-1191-00 FRAME SECTION
 COST:^a .035/in STATUS CODE:^a CS
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



251-1192-00 TRANSFORMER SUPPORT
 COST:^a .071/in STATUS CODE:^a CR
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



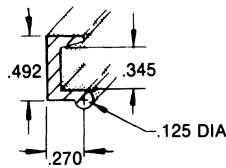
251-1193-00 FRAME SECTION
 COST:^a .055/in STATUS CODE:^a CR
 WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6



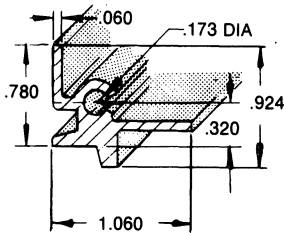
251-1194-00 FRAME SECTION
 COST:^a .154/in STATUS CODE:^a CR
 WEIGHT (lb/in): .036 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

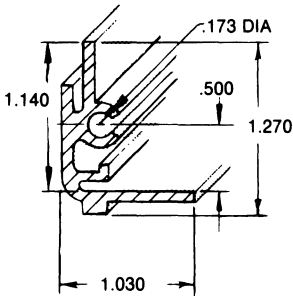
MISCELLANEOUS EXTRUSIONS (cont)



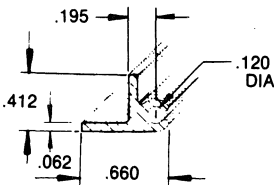
251-1195-00 FRAME SECTION
COST:^a .031/in STATUS CODE:^a CR
WEIGHT (lb/in): .008 ALLOY & TEMPER: 6063-T6



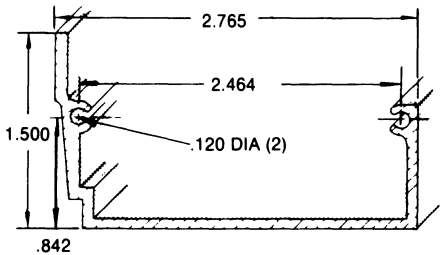
251-1196-00 FRAME SECTION
COST:^a .062/in STATUS CODE:^a CR
WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6



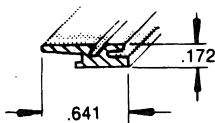
251-1197-00 FRAME SECTION
COST:^a .063/in STATUS CODE:^a CR
WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



251-1200-00 GUIDE
COST:^a .029/in STATUS CODE:^a CR
WEIGHT (lb/in): .008 ALLOY & TEMPER: 6063-T6



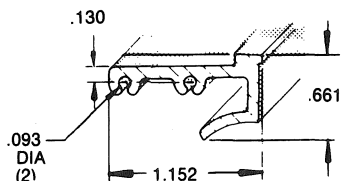
251-1203-00 FRAME SECTION
COST:^a .176/in STATUS CODE:^a CR
WEIGHT (lb/in): .044 ALLOY & TEMPER: 6063-T6
FINISH: F-0 On all surfaces



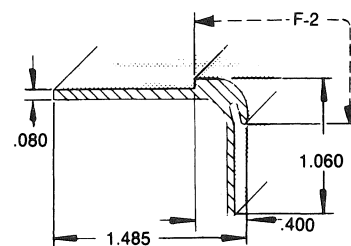
251-1205-00 TRIM
COST:^a .012/in STATUS CODE:^a CS
WEIGHT (lb/in): .006 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

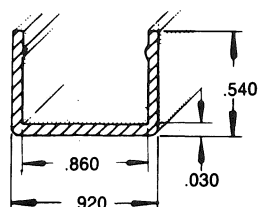
MISCELLANEOUS EXTRUSIONS (cont)



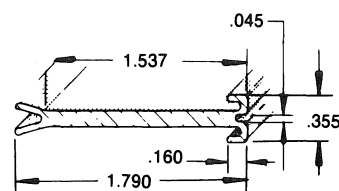
251-1206-00 FRAME SECTION
 COST:^a .089/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6



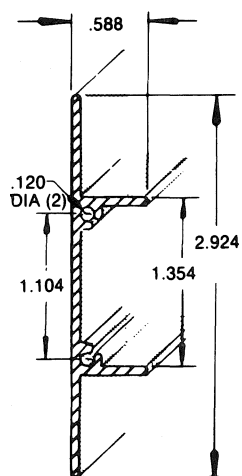
251-1208-00 FRAME SECTION
 COST:^a .041/in STATUS CODE:^a CR
 WEIGHT (lb/in): .021 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



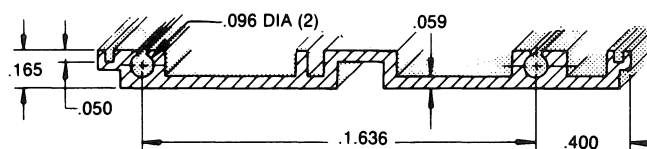
251-1209-00 CAM SWITCH COVER
 COST:^a .214/in STATUS CODE:^a CR
 WEIGHT (lb/in): .083 ALLOY & TEMPER: 6063-T6



251-1210-00 RACK MOUNT SPACER
 COST:^a .033/in STATUS CODE:^a CS
 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6



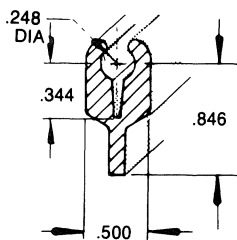
251-1221-00 CONNECTOR BRACKET
 STATUS CODE:^a OB
 WEIGHT (lb/in): .027 ALLOY & TEMPER: 6063-T6



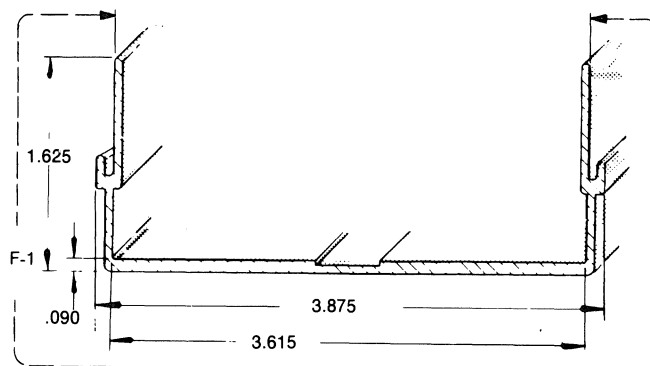
251-1222-00 FRAME SECTION
 COST:^a .029/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

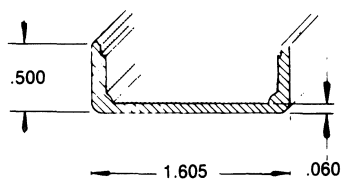
MISCELLANEOUS EXTRUSIONS (cont)



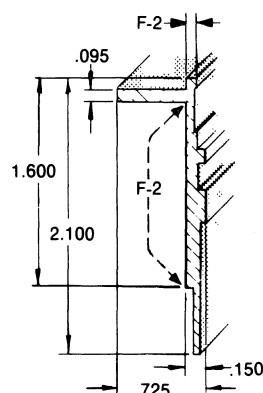
251-1223-00 SWITCH LEVER
STATUS CODE:^a OB
WEIGHT (lb/in): .026 ALLOY & TEMPER: 6063-T6



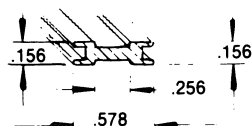
251-1224-00 FRAME SECTION
COST:^a .173/in STATUS CODE:^a CR
WEIGHT (lb/in): .054 ALLOY & TEMPER: 6063-T6
FINISH: F-0 Except as noted



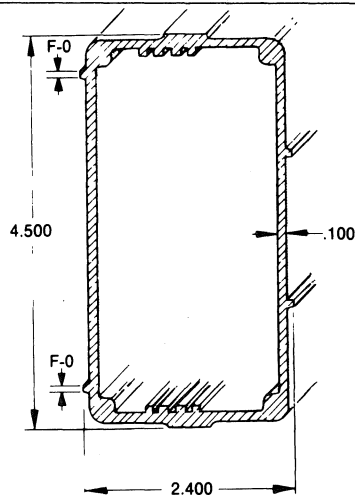
251-1225-00 OUTPUT AMPLIFIER HOUSING
COST:^a .049/in STATUS CODE:^a CR
WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6



251-1226-00 FRAME SECTION
COST:^a .208/in STATUS CODE:^a CR
WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



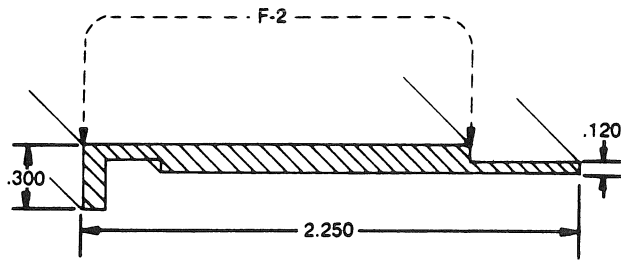
251-1229-00 SLIDE GUIDE
COST:^a .042/in STATUS CODE:^a CR
WEIGHT (lb/in): .083 ALLOY & TEMPER: 6063-T6



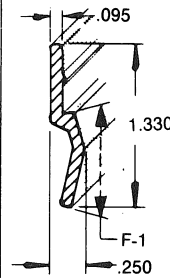
251-1231-00 HOUSING
COST:^a 3.492/lb STATUS CODE:^a CR
ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

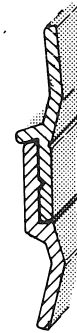
MISCELLANEOUS EXTRUSIONS (cont)



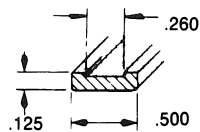
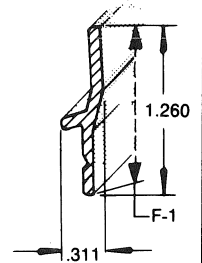
251-1233-00 FRAME SECTION
 COST:^a .048/in STATUS CODE:^a CR
 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



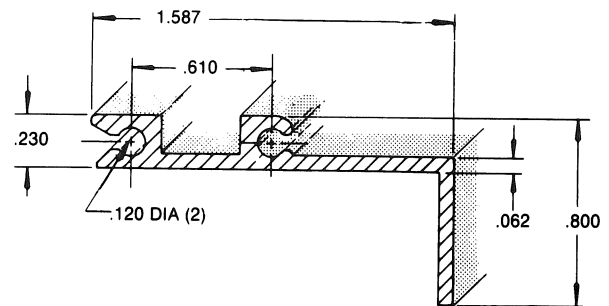
251-1236-00 FRAME SECTION
 COST:^a .033/in STATUS CODE:^a CR
 WEIGHT (lb/in): .012 ALLOY & TEMPER: 6063-T6



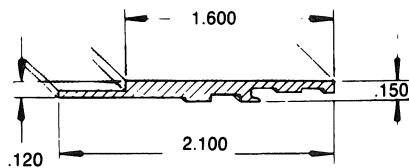
251-1237-00 FRAME SECTION
 COST:^a .039/in STATUS CODE:^a CR
 WEIGHT (lb/in): .012 ALLOY & TEMPER: 6063-T6



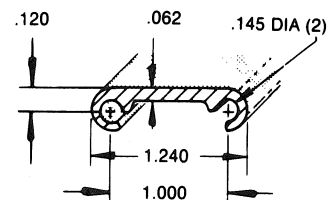
251-1244-00 CARRYING HANDLE
 COST:^a .007/in STATUS CODE:^a CR
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6



251-1249-00 CIRCUIT BOARD FRAME
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



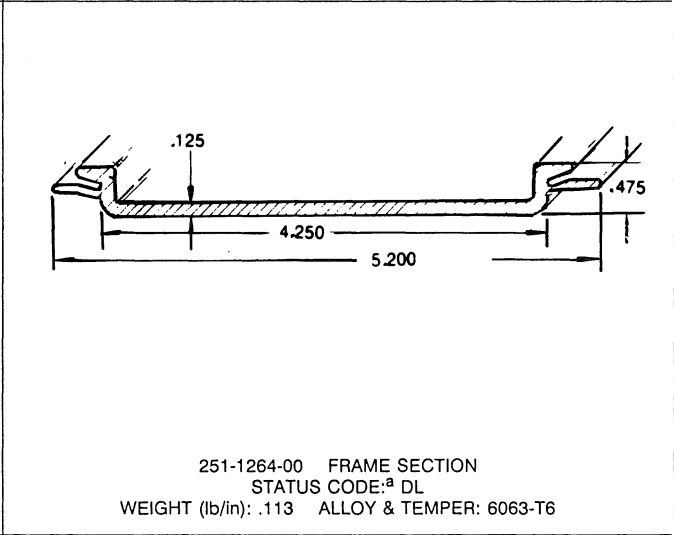
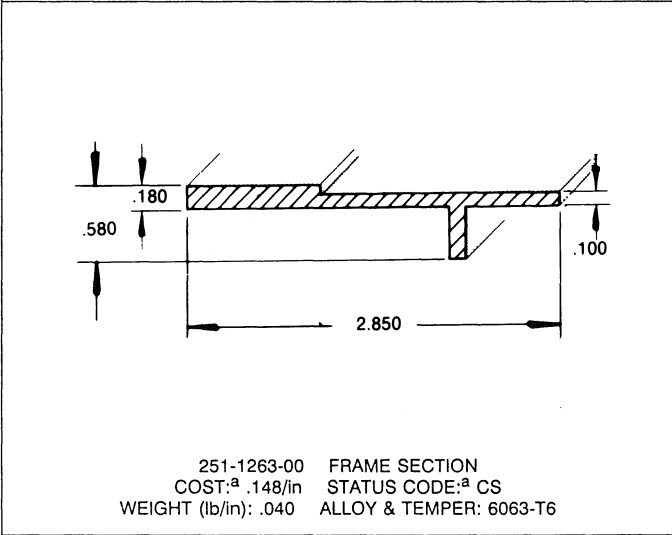
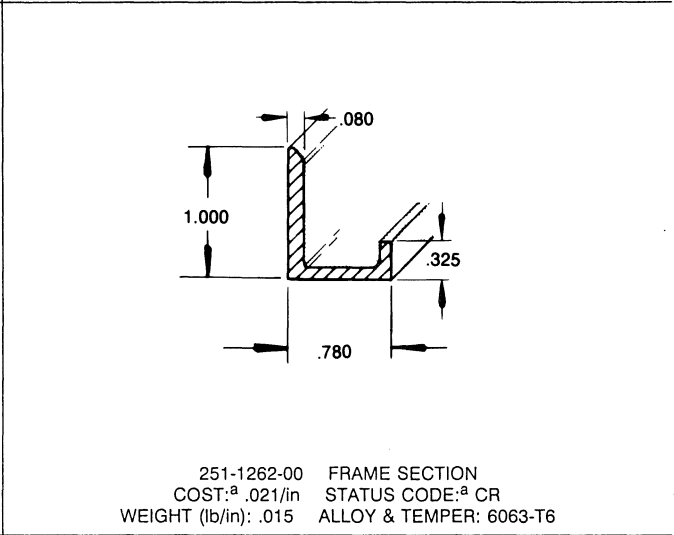
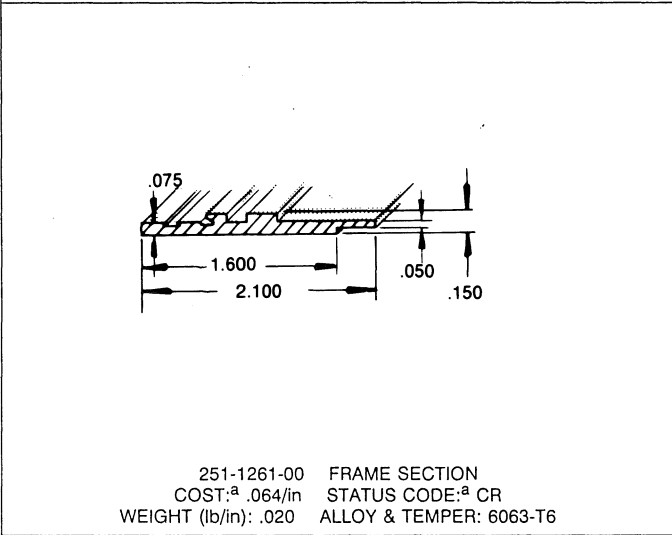
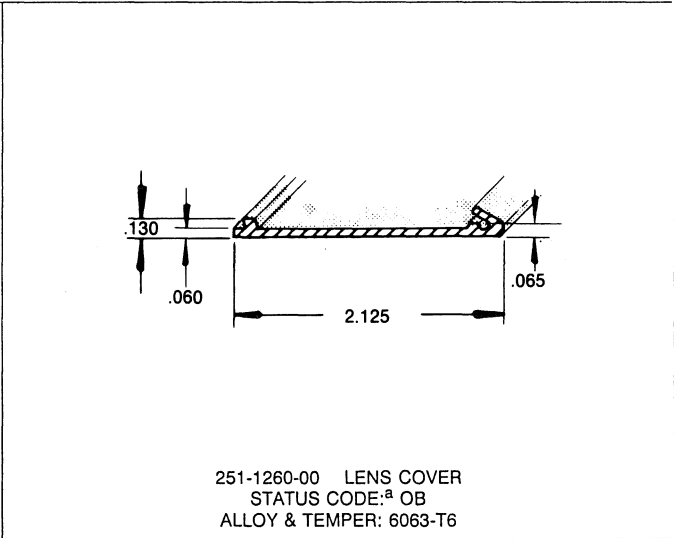
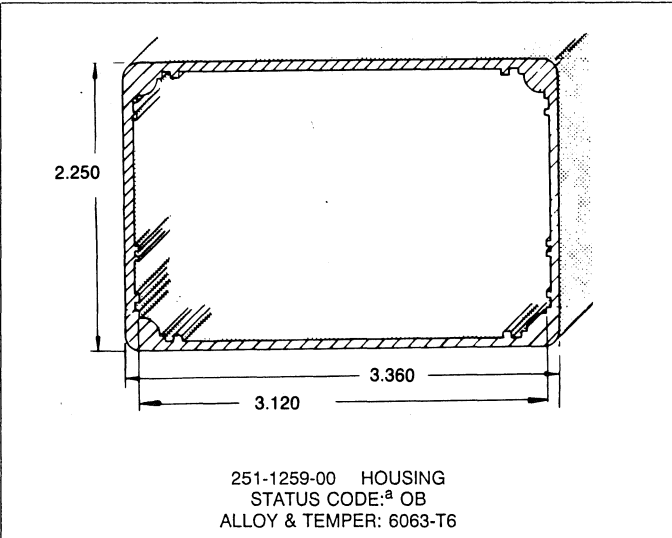
251-1252-00 FRAME SECTION
 COST:^a .073/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6



251-1258-00 KNOB GUARD
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6

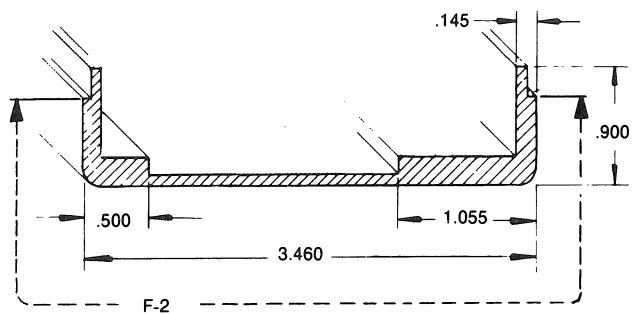
^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

MISCELLANEOUS EXTRUSIONS (cont)

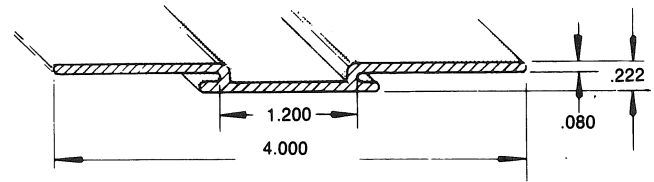


^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

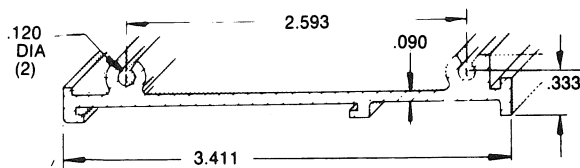
MISCELLANEOUS EXTRUSIONS (cont)



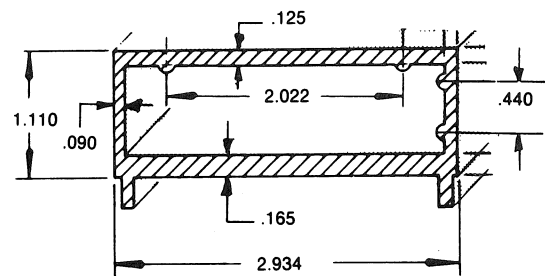
251-1265-00 FRAME SECTION
 COST:^a .179/in STATUS CODE:^a CR
 WEIGHT (lb/in): .072 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



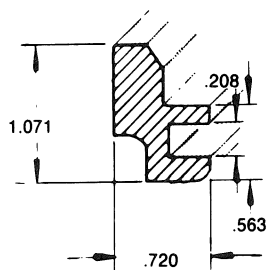
251-1266-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



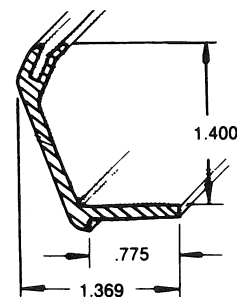
251-1268-00 FRAME SECTION
 COST:^a .505/in STATUS CODE:^a CR
 WEIGHT (lb/in): .031 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



251-1269-00 HOUSING
 COST:^a .088/in STATUS CODE:^a CS
 WEIGHT (lb/in): .111 ALLOY & TEMPER: 6061-T6



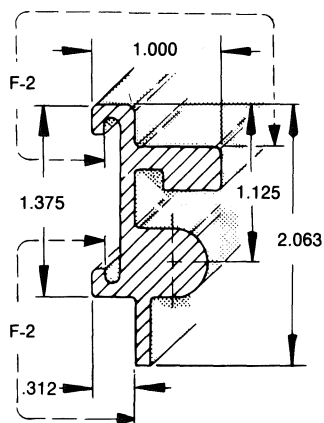
251-1271-00 HEAD MOUNT
 STATUS CODE:^a NP
 WEIGHT (lb/in): .042 ALLOY & TEMPER: 6063-T6



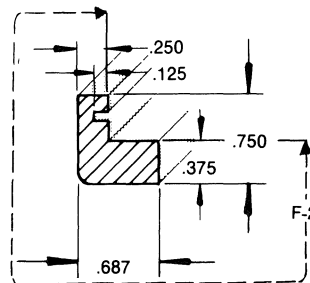
251-1272-00 FRAME SECTION
 COST:^a .038/in STATUS CODE:^a CS
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T5

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

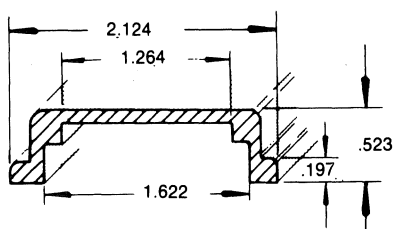
MISCELLANEOUS EXTRUSIONS (cont)



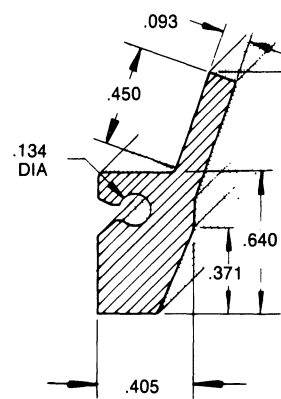
251-1278-00 FRAME SECTION
 COST:^a .252/in STATUS CODE:^a CR
 WEIGHT (lb/in): .065 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



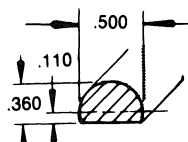
251-1291-00 PAPER CUTTER SUPPORT
 COST:^a .059/in STATUS CODE:^a CR
 WEIGHT (lb/in): .034 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



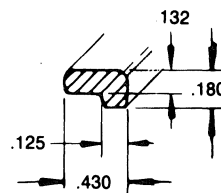
251-1293-00 SHIELD
 COST:^a .078/in STATUS CODE:^a CS
 WEIGHT (lb/in): .032 ALLOY & TEMPER: 6063-T5
 FINISH: F-1 On all surfaces



251-1296-00 SUPPORT BLOCK
 COST:^a .044/in STATUS CODE:^a CS
 WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6



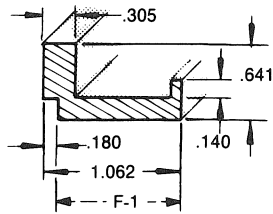
251-1297-00 PEN BAR CAM
 COST:^a .180/in STATUS CODE:^a CS
 WEIGHT (lb/in): .014 ALLOY & TEMPER: 6061-T6



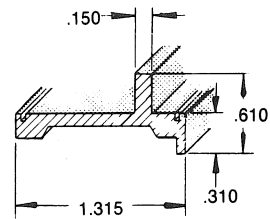
251-1300-00 NUT BLOCK
 COST:^a .268/in STATUS CODE:^a CR
 WEIGHT (lb/in): .006 ALLOY & TEMPER: 7075-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

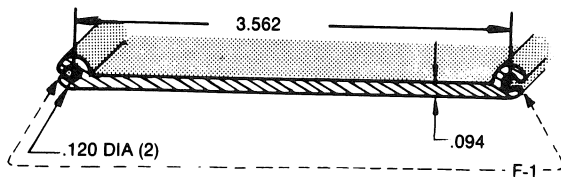
MISCELLANEOUS EXTRUSIONS (cont)



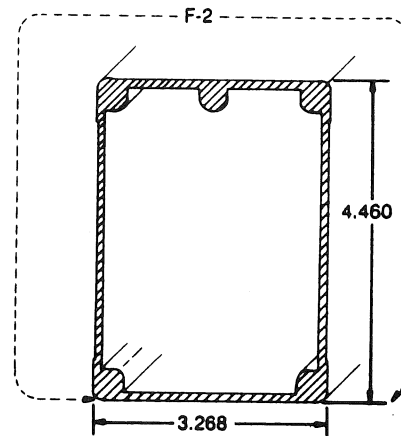
251-1302-00 ANGLE BRACKET
 COST:^a .063/in STATUS CODE:^a CR
 WEIGHT (lb/in): .030 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



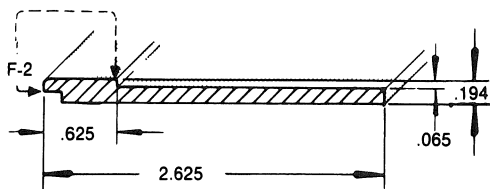
251-1303-00 FRAME SECTION
 COST:^a .030/in STATUS CODE:^a CS
 WEIGHT (lb/in): .021 ALLOY & TEMPER: 6063-T6



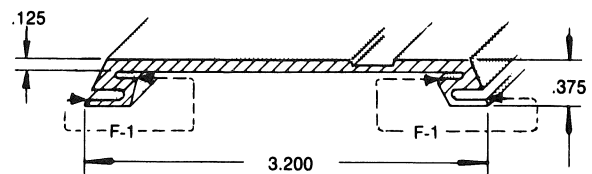
251-1304-00 FRAME SECTION
 COST:^a .100/in STATUS CODE:^a CR
 WEIGHT (lb/in): .038 ALLOY & TEMPER: 6063-T6



251-1310-00 HOUSING
 COST:^a 1.998/ea STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



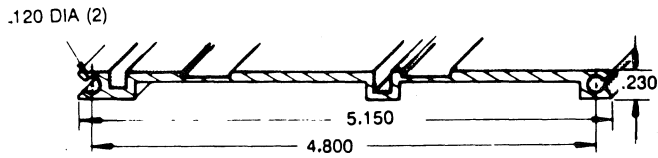
251-1314-00 FRAME SECTION
 COST:^a .062/in STATUS CODE:^a CR
 WEIGHT (lb/in): .036 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



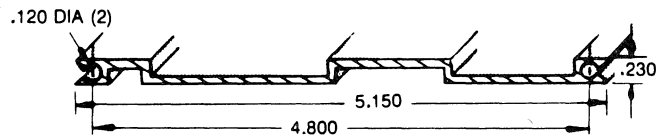
251-1315-00 FRAME SECTION
 COST:^a .121/in STATUS CODE:^a CR
 WEIGHT (lb/in): .047 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

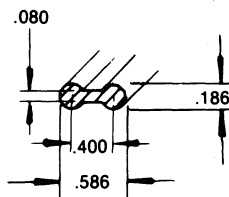
MISCELLANEOUS EXTRUSIONS (cont)



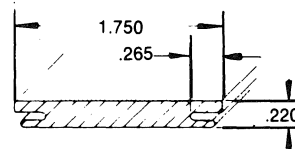
251-1321-00 FRAME SECTION
 COST:^a .089/in STATUS CODE:^a CS
 WEIGHT (lb/in): .050 ALLOY & TEMPER: 6063-T6



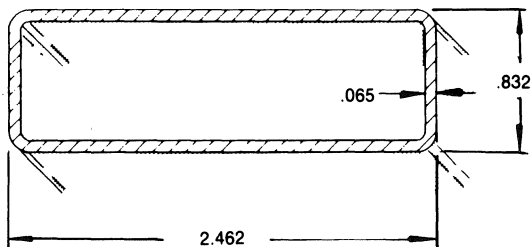
251-1322-00 FRAME SECTION
 COST:^a .078/in STATUS CODE:^a CS
 WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6



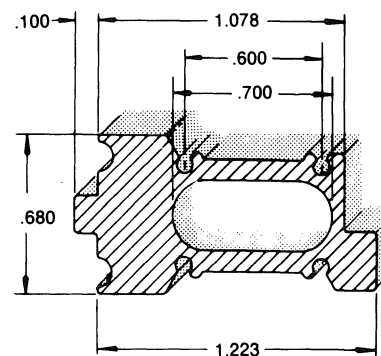
251-1323-00 PEN MECH LINK
 COST:^a .012/in STATUS CODE:^a CS
 WEIGHT (lb/in): .007 ALLOY & TEMPER: 6061-T6



251-1325-00 FRAME SECTION
 COST:^a .090/in STATUS CODE:^a CR
 WEIGHT (lb/in): .034 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



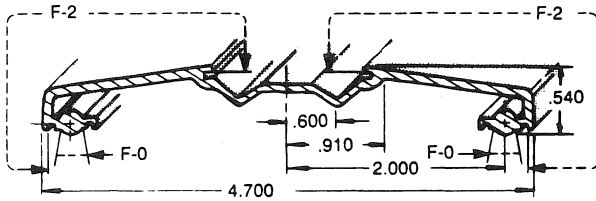
251-1330-00 HOUSING
 COST:^a .070/in STATUS CODE:^a CR
 WEIGHT (lb/in): .040 ALLOY & TEMPER: 6063-T6



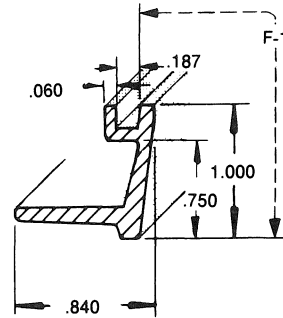
251-1331-00 TEMPERATURE STABILIZER
 COST:^a .323/in STATUS CODE:^a CR
 WEIGHT (lb/in): .043 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

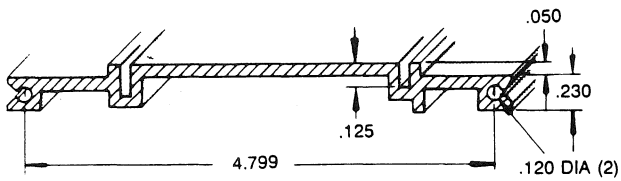
MISCELLANEOUS EXTRUSIONS (cont)



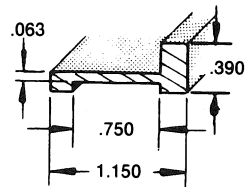
251-1333-00 FRAME SECTION
 COST:^a 2.755/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



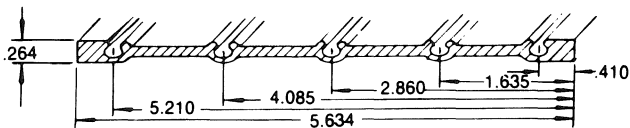
251-1336-00 SUPPORT BLOCK
 COST:^a .038/in STATUS CODE:^a CS
 WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



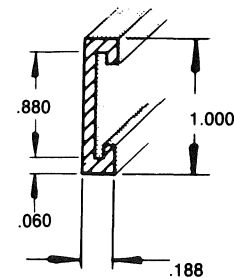
251-1345-00 FRAME SECTION
 COST:^a .095/in STATUS CODE:^a CR
 WEIGHT (lb/in): .041 ALLOY & TEMPER: 6063-T6



251-1346-00 SHIELD
 COST:^a .064/in STATUS CODE:^a CR
 WEIGHT (lb/in): .056 ALLOY & TEMPER: 6063-T6



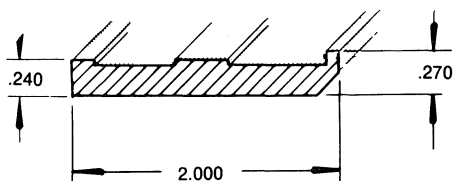
251-1347-00 ELECTRICAL SHIELD
 COST:^a .082/in STATUS CODE:^a CR
 WEIGHT (lb/in): .068 ALLOY & TEMPER: 6063-T6



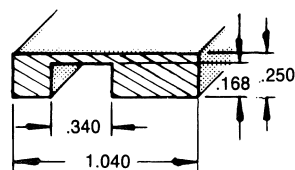
251-1349-00 IDENTIFICATION PLATE HOLDER
 COST:^a .014/in STATUS CODE:^a CR
 WEIGHT (lb/in): .011 ALLOY & TEMPER: 6063-T5

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

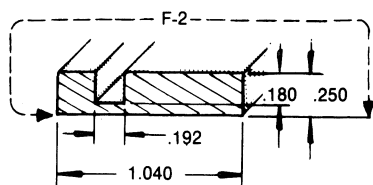
MISCELLANEOUS EXTRUSIONS (cont)



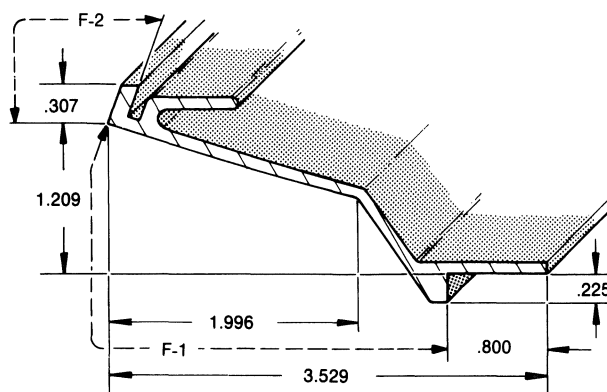
251-1353-00 STIFFENER PLATE
 COST:^a .079/in STATUS CODE:^a CS
 WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6



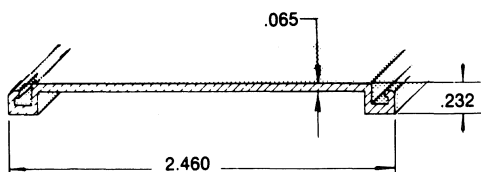
251-1360-00 ELECTRICAL SHIELD
 COST:^a .038/in STATUS CODE:^a CR
 WEIGHT (lb/in): .021 ALLOY & TEMPER: 6063-T6



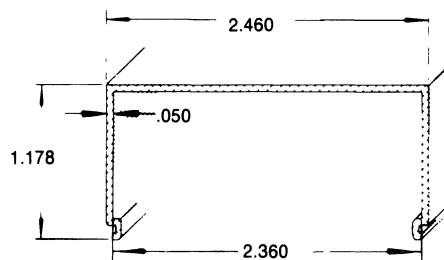
251-1361-00 FRAME SECTION
 COST:^a .047/in STATUS CODE:^a CR
 WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



251-1367-00 FRAME SECTION
 COST:^a .130/in STATUS CODE:^a CR
 WEIGHT (lb/in): .055 ALLOY & TEMPER: 6063-T5
 FINISH: F-0 Except as noted



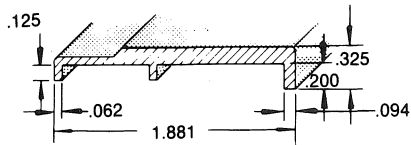
251-1369-00 FRAME SECTION
 COST:^a .202/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6



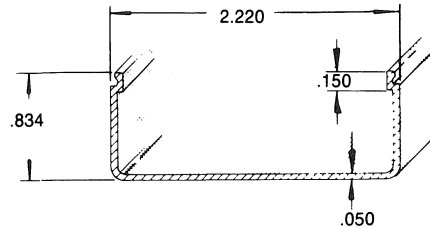
251-1370-00 WRAPAROUND
 COST:^a .176/in STATUS CODE:^a CR
 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

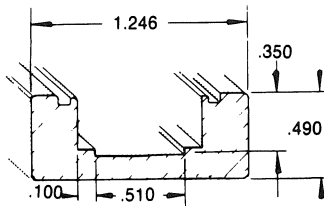
MISCELLANEOUS EXTRUSIONS (cont)



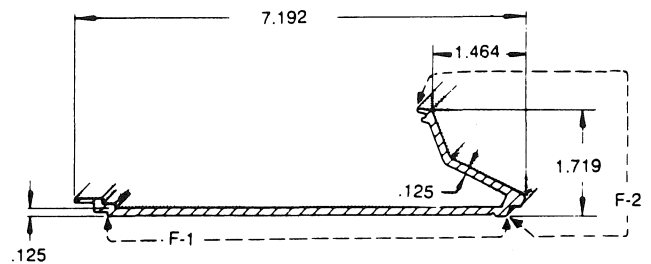
251-1371-00 RETAINER
 COST:^a .045/in STATUS CODE:^a CR
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



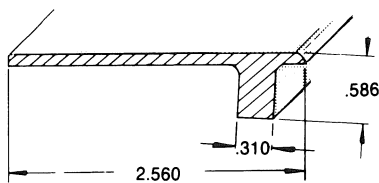
251-1372-00 WRAPAROUND
 COST:^a .052/in STATUS CODE:^a CS
 WEIGHT (lb/in): .017 ALLOY & TEMPER: 6063-T6



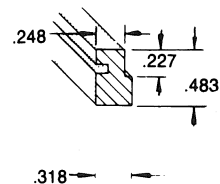
251-1375-00 HOUSING
 COST:^a .174/in STATUS CODE:^a CR
 WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6



251-1376-00 FRAME SECTION
 COST:^a .269/in STATUS CODE:^a CS
 WEIGHT (lb/in): .119 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



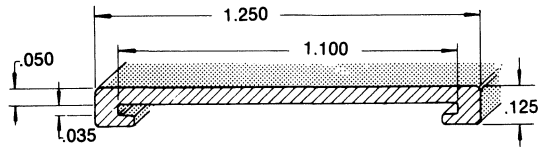
251-1380-00 COVER HOLD DOWN BRACKET
 COST:^a .070/in STATUS CODE:^a CS
 WEIGHT (lb/in): .040 ALLOY & TEMPER: 6063-T6



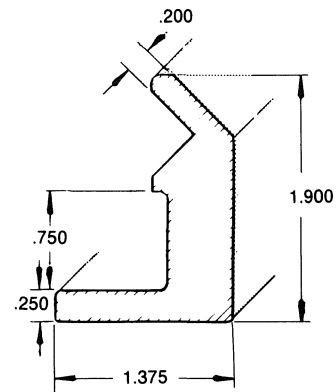
251-1393-00 CIRCUIT BOARD SUPPORT
 COST:^a .039/in STATUS CODE:^a CS
 WEIGHT (lb/in): .013 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

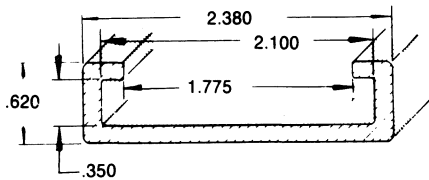
MISCELLANEOUS EXTRUSIONS (cont)



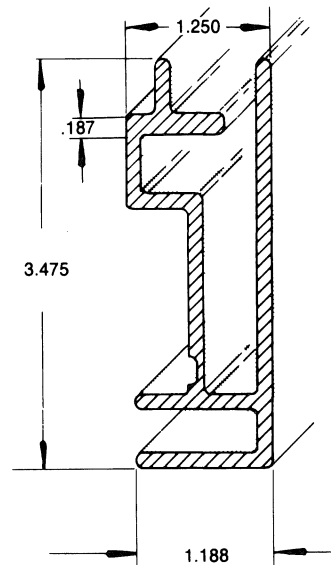
251-1394-00 HOLDER
 COST:^a .025/in STATUS CODE:^a CR
 WEIGHT (lb/in): .008 ALLOY & TEMPER: 6063-T6



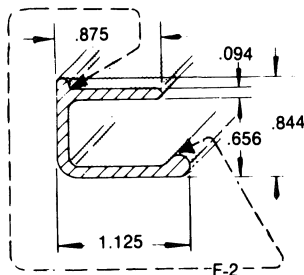
251-1396-00 CLAMP
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



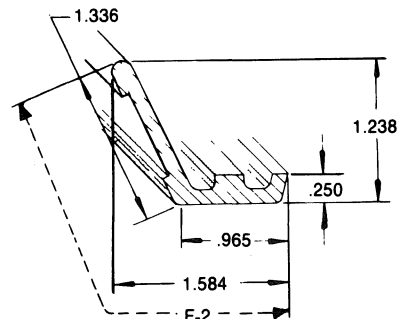
251-1397-00 BRACKET
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



251-1423-00 HANDLE
 STATUS CODE:^a DL
 WEIGHT (lb/in): .121 ALLOY & TEMPER: 6063-T6



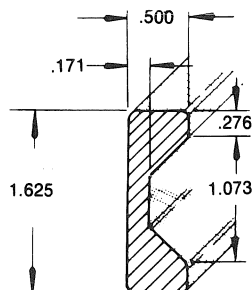
251-1424-00 HANDLE
 COST:^a .062/in STATUS CODE:^a CR
 WEIGHT (lb/in): .025 ALLOY & TEMPER: 6063-T6



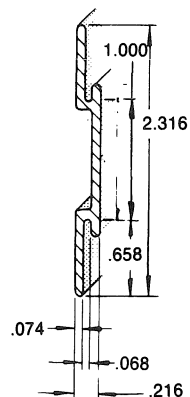
251-1425-00 TRIM STRIP
 COST:^a 1.751/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

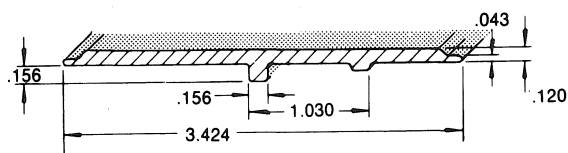
MISCELLANEOUS EXTRUSIONS (cont)



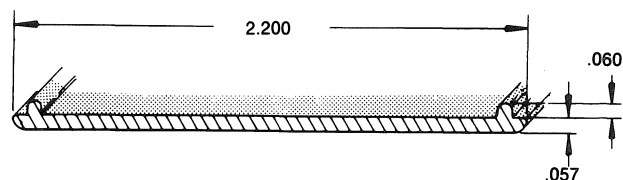
251-1428-00 BRACKET
 COST:^a .080/in STATUS CODE:^a CS
 WEIGHT (lb/in): .054 ALLOY & TEMPER: 6063-T5



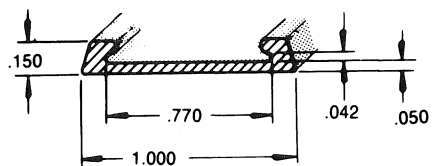
251-1434-00 FRAME SECTION
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



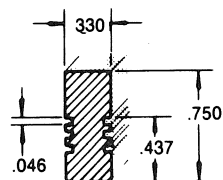
251-1435-00 ADAPTOR PLATE
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6



251-1444-00 COVER
 COST:^a .028/in STATUS CODE:^a CR
 WEIGHT (lb/in): .014 ALLOY & TEMPER: 6063-T6



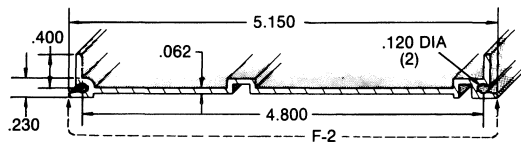
251-1447-00 RETAINER
 COST:^a .010/in STATUS CODE:^a CS
 WEIGHT (lb/in): .007 ALLOY & TEMPER: 6063-T6



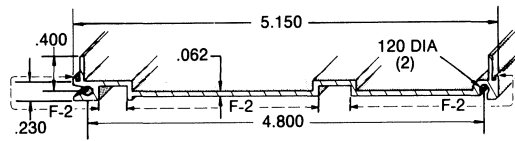
251-1449-00 HANDLE
 COST:^a .075/in STATUS CODE:^a CS
 WEIGHT (lb/in): .024 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

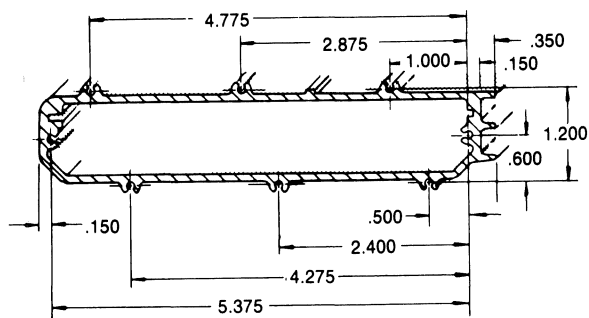
MISCELLANEOUS EXTRUSIONS (cont)



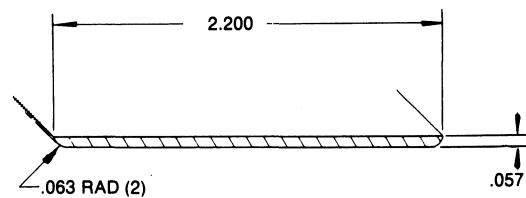
251-1452-00 FRAME SECTION
 COST:^a .138/in STATUS CODE:^a CR
 WEIGHT (lb/in): .042 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



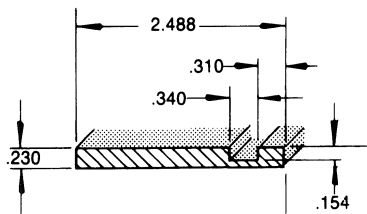
251-1453-00 FRAME SECTION
 COST:^a .145/in STATUS CODE:^a CR
 WEIGHT (lb/in): .044 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



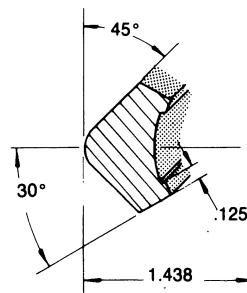
251-1456-02 HOUSING
 COST:^a .580/in STATUS CODE:^a CR
 WEIGHT (lb/in): .162 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



251-1458-00 COVER
 COST:^a .052/in STATUS CODE:^a CR
 WEIGHT (lb/in): .014 ALLOY & TEMPER: 6063-T6



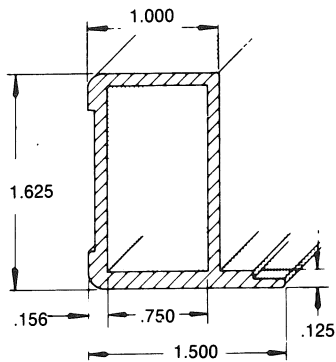
251-1461-00 COVER
 COST:^a .073/in STATUS CODE:^a OT
 WEIGHT (lb/in): .049 ALLOY & TEMPER: 6063-T6



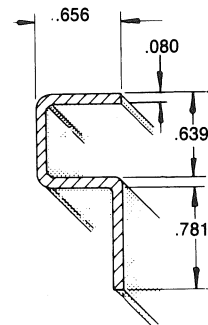
251-1462-00 SUPPORT
 COST:^a .128/in STATUS CODE:^a CS
 WEIGHT (lb/in): .045 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

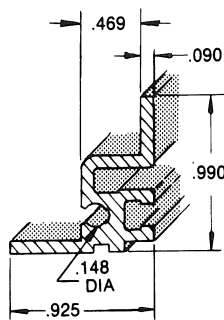
MISCELLANEOUS EXTRUSIONS (cont)



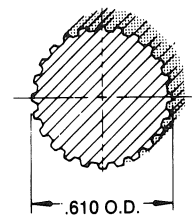
251-1464-00 TRIM
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



251-1465-00 TRIM
STATUS CODE:^a OB
WEIGHT (lb/in): .020 ALLOY & TEMPER: 6063-T6

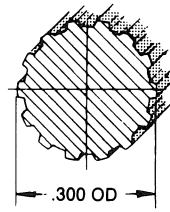
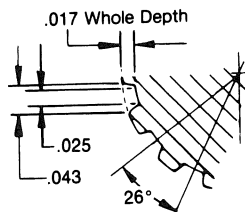


251-1469-00 FRAME SECTION
COST:^a .055/in STATUS CODE:^a CR
WEIGHT (lb/in): .023 ALLOY & TEMPER: 6063-T6



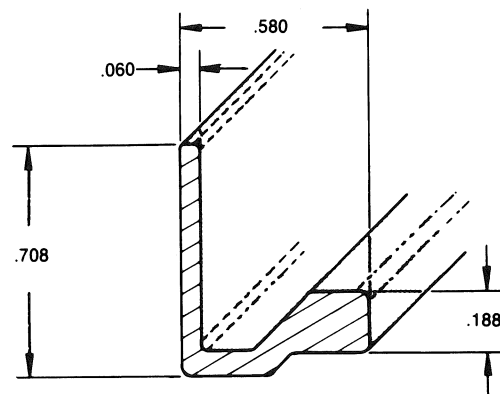
Diametral Pitch: 40
Number of Teeth: 24

251-1470-00 GEAR
COST:^a 1.660/in STATUS CODE:^a CS
WEIGHT (lb/in): .200 ALLOY & TEMPER: 6061-T6



Number of Teeth: 14

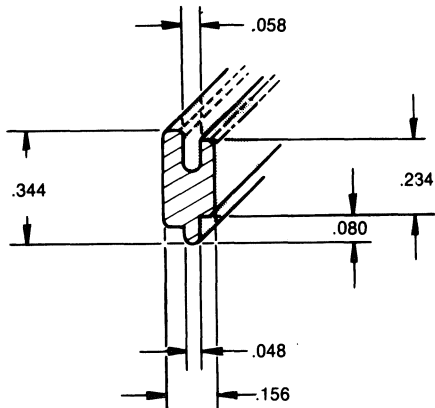
251-1472-00 KNOB
COST:^a .028/in STATUS CODE:^a CR
WEIGHT (lb/in): .007 ALLOY & TEMPER: 6061-T6



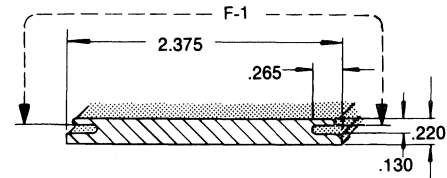
251-1475-00 NUT BLOCK
COST:^a 4.160/lb STATUS CODE:^a CR
ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

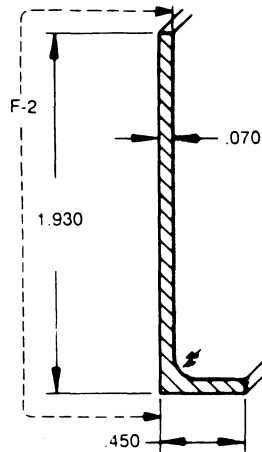
MISCELLANEOUS EXTRUSIONS (cont)



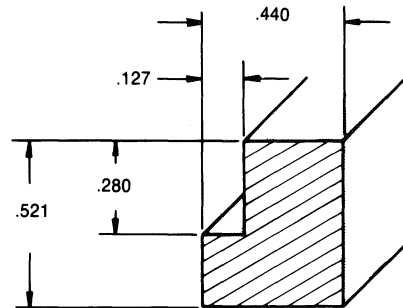
251-1476-00 SPACER
COST:^a 3.100/lb STATUS CODE:^a CR
ALLOY & TEMPER: 6063-T6



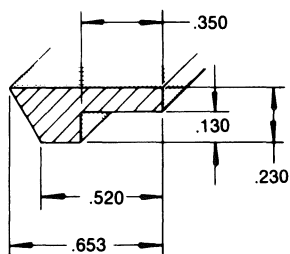
251-1477-00 FRAME SECTION
COST:^a .131/in STATUS CODE:^a CR
WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6
FINISH: F-0 Except as noted



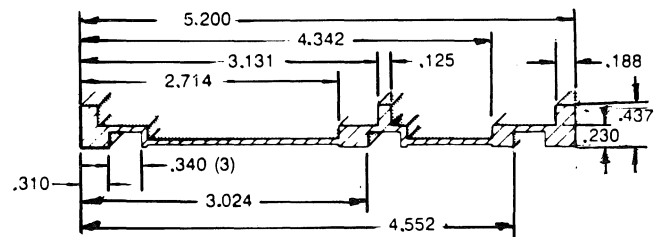
251-1478-00 BRACKET
COST:^a .074/in STATUS CODE:^a CR
WEIGHT (lb/in): .016 ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



251-1480-00 FRAME SECTION
COST:^a .072/in STATUS CODE:^a CR
WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6



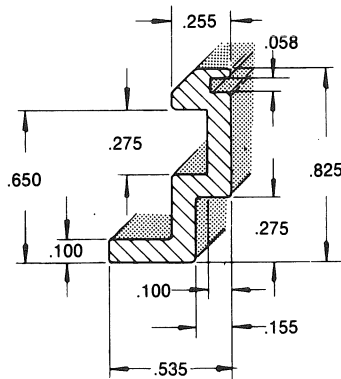
251-1485-00 LATCH
COST:^a .042/in STATUS CODE:^a CR
WEIGHT (lb/in): .013 ALLOY & TEMPER: 6063-T6



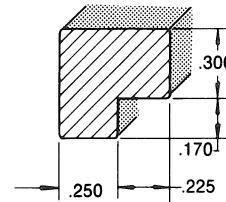
251-1489-00 SUPPORT
COST:^a .175/in STATUS CODE:^a CS
WEIGHT (lb/in): .058 ALLOY & TEMPER: 6061-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

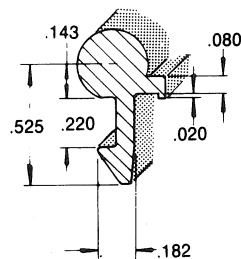
MISCELLANEOUS EXTRUSIONS (cont)



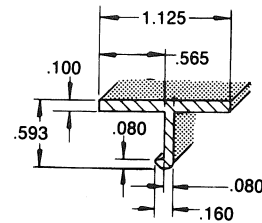
251-1496-00 GUIDE
 COST:^a .057/in STATUS CODE:^a CR
 WEIGHT (lb/in): .004 ALLOY & TEMPER: 6063-T6



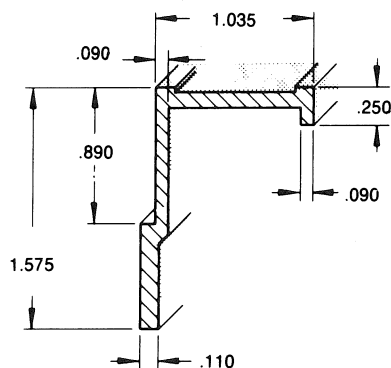
251-1497-00 SLIDE
 COST:^a .034/in STATUS CODE:^a CR
 WEIGHT (lb/in): .019 ALLOY & TEMPER: 6063-T6



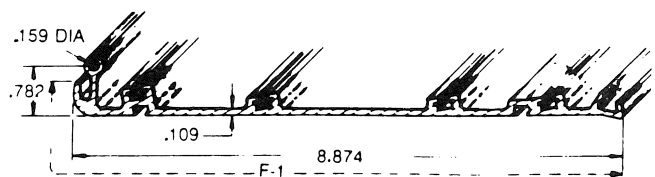
251-1498-00 LATCH
 COST:^a .240/in STATUS CODE:^a CR
 WEIGHT (lb/in): .012 ALLOY & TEMPER: 2024-T3



251-1499-00 LATCH
 COST:^a .224/in STATUS CODE:^a CR
 WEIGHT (lb/in): .016 ALLOY & TEMPER: 2024-T3



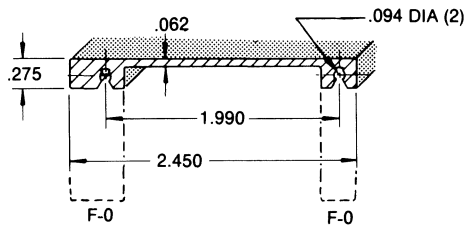
251-1500-00 HANDLE, Safety Controlled
 COST:^a .093/in STATUS CODE:^a CR
 WEIGHT (lb/in): .028 ALLOY & TEMPER: 6063-T6



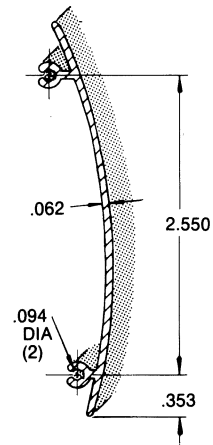
251-1501-01 FRAME SECTION
 COST:^a .732/in STATUS CODE:^a CR
 WEIGHT (lb/in): .167 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

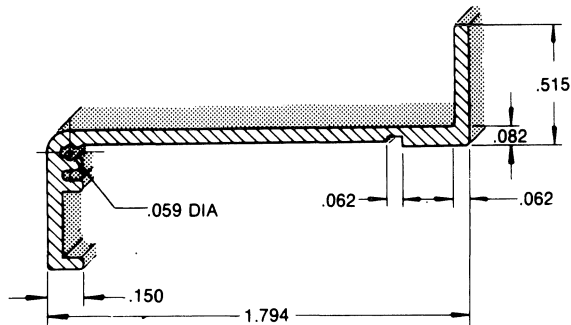
MISCELLANEOUS EXTRUSIONS (cont)



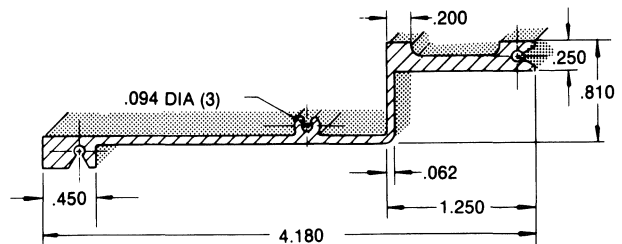
251-1502-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6
FINISH: F-1 Except as noted



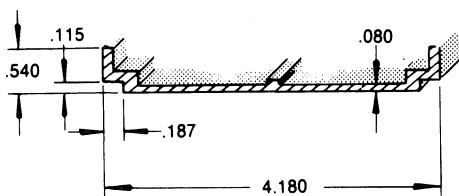
251-1503-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



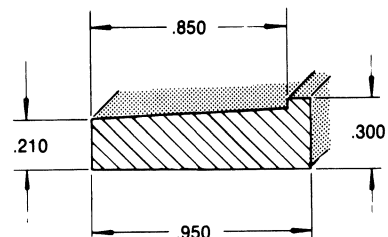
251-1504-00 FRAME SECTION
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



251-1505-00 FRAME SUPPORT
STATUS CODE:^a OB
ALLOY & TEMPER: 6063-T6



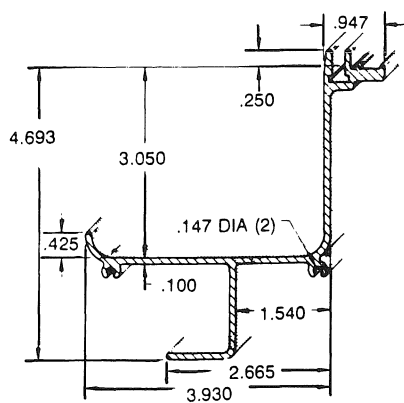
251-1506-00 SHIELD
COST:^a .089/in STATUS CODE:^a CS
WEIGHT (lb/in): .053 ALLOY & TEMPER: 6063-T6
FINISH: F-1 On all surfaces



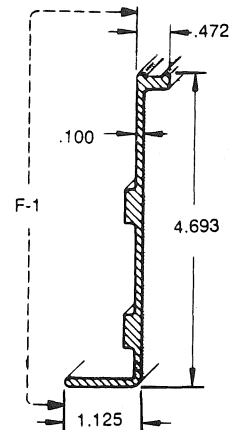
251-1510-00 NUT BLOCK
COST:^a .036/in STATUS CODE:^a OT
WEIGHT (lb/in): .024 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

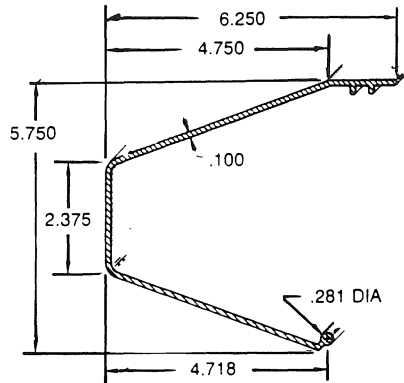
MISCELLANEOUS EXTRUSIONS (cont)



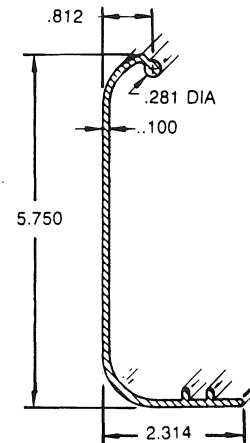
251-1514-00 FRAME SECTION
 COST:^a .288/in STATUS CODE:^a CS
 WEIGHT (lb/in): .145 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



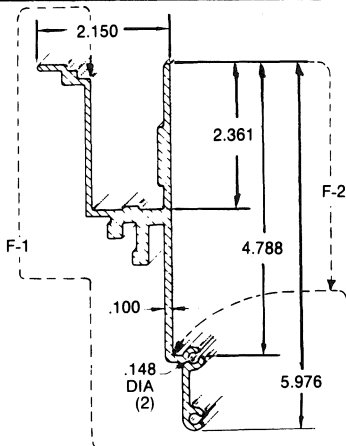
251-1515-00 FRAME SECTION
 COST:^a .234/in STATUS CODE:^a CS
 WEIGHT (lb/in): .080 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



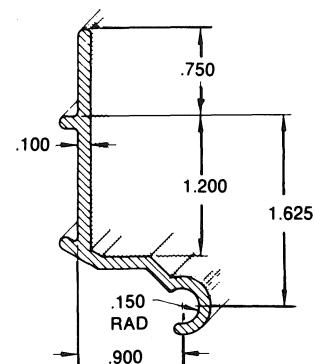
251-1517-00 FRAME SECTION
 COST:^a .063/in STATUS CODE:^a CS
 WEIGHT (lb/in): .151 ALLOY & TEMPER: 6063-T6



251-1518-00 FRAME SECTION
 COST:^a .105/in STATUS CODE:^a CS
 WEIGHT (lb/in): .087 ALLOY & TEMPER: 6063-T6



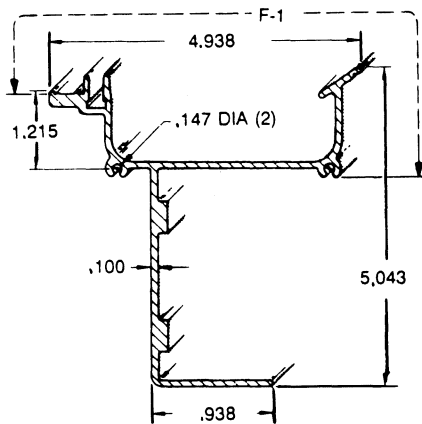
251-1519-00 SUPPORT
 COST:^a .474/in STATUS CODE:^a CS
 WEIGHT (lb/in): .154 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



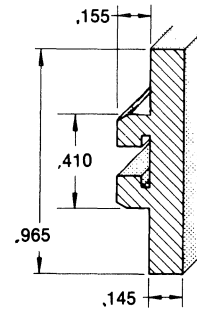
251-1520-00 HINGE
 COST:^a .072/in STATUS CODE:^a CS
 WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

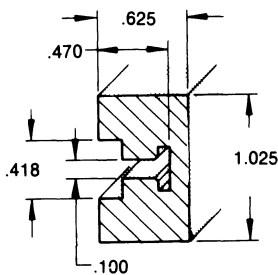
MISCELLANEOUS EXTRUSIONS (cont)



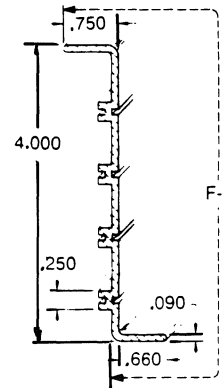
251-1521-00 FRAME SECTION
 COST:^a .583/in STATUS CODE:^a CS
 WEIGHT (lb/in): .167 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



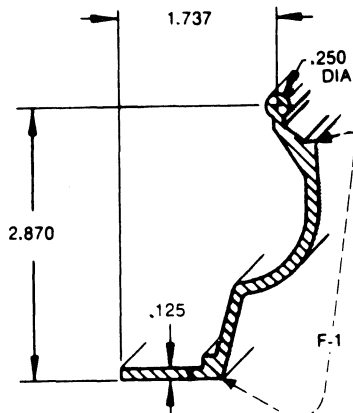
251-1522-00 ATTENUATOR PLATE
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6



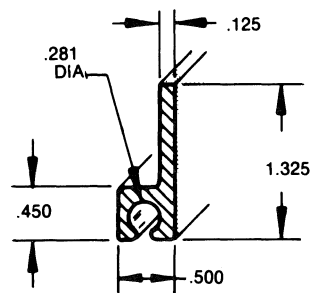
251-1523-00 FRAME SECTION
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T6



251-1529-00 FRAME SECTION
 COST:^a .109/in STATUS CODE:^a CS
 WEIGHT (lb/in): .050 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



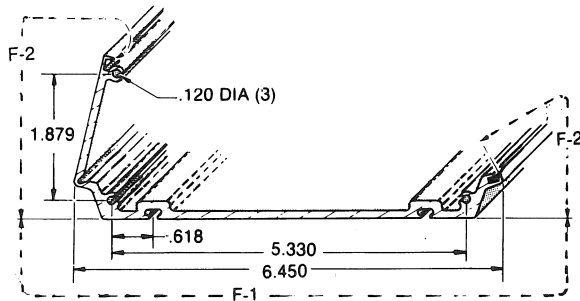
251-1530-00 FRAME SECTION
 COST:^a .115/in STATUS CODE:^a CS
 WEIGHT (lb/in): .060 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



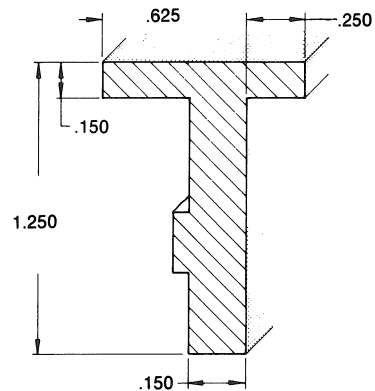
251-1531-00 GUIDE
 COST:^a 2.444/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

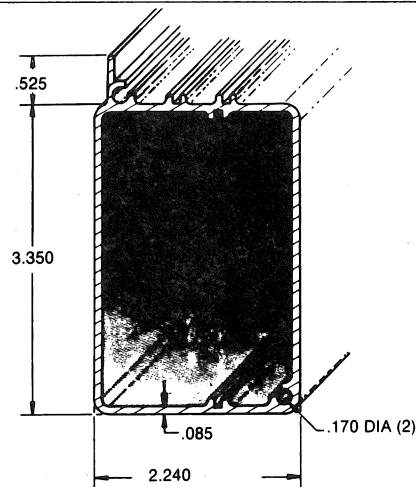
MISCELLANEOUS EXTRUSIONS (cont)



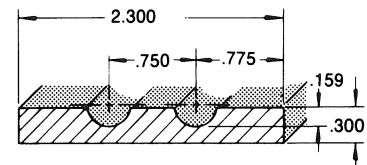
251-1532-00 FRAME SECTION
 COST:^a .270/in STATUS CODE:^a CR
 WEIGHT (lb/in): .097 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



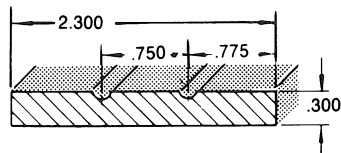
251-1534-00 SWITCH SUPPORT
 COST:^a .056/in STATUS CODE:^a CS
 WEIGHT (lb/in): .032 ALLOY & TEMPER: 6063-T6



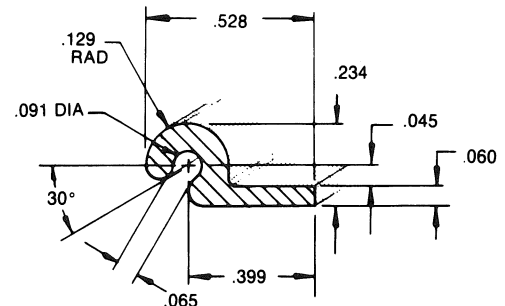
251-1538-00 HOUSING
 COST:^a .343/in STATUS CODE:^a CR
 WEIGHT (lb/in): .117 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all exposed surfaces



251-1540-00 DELAY LINE CLAMP
 COST:^a .259/in STATUS CODE:^a CR
 WEIGHT (lb/in): .067 ALLOY & TEMPER: 6061-T6



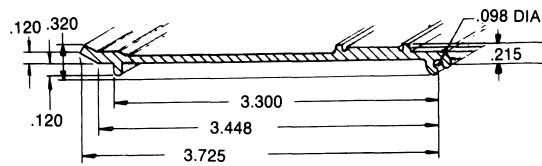
251-1541-00 DELAY LINE CLAMP
 COST:^a .241/in STATUS CODE:^a CR
 WEIGHT (lb/in): .065 ALLOY & TEMPER: 6061-T6



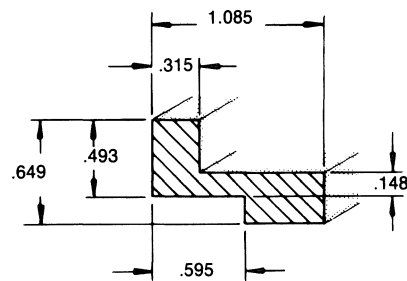
251-1553-00 HINGE
 COST:^a .009/in STATUS CODE:^a CR
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

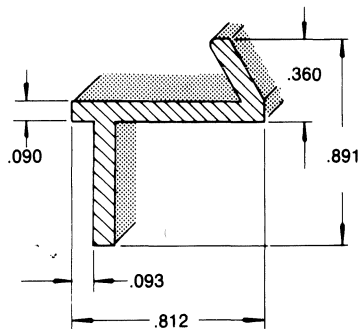
MISCELLANEOUS EXTRUSIONS (cont)



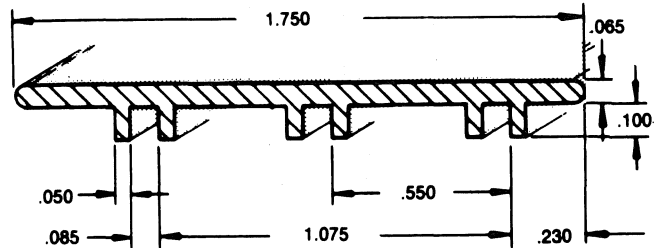
251-1554-00 COVER
 COST:^a .067/in STATUS CODE:^a CS
 WEIGHT (lb/in): .046 ALLOY & TEMPER: 6063-T6



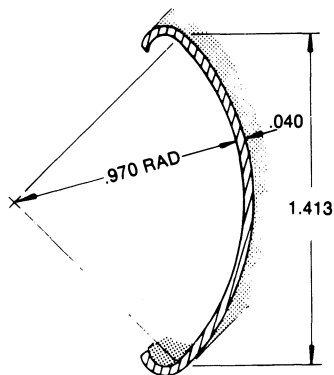
251-1560-00 PIVOT
 COST:^a .052/in STATUS CODE:^a CS
 WEIGHT (lb/in): .035 ALLOY & TEMPER: 6063-T6



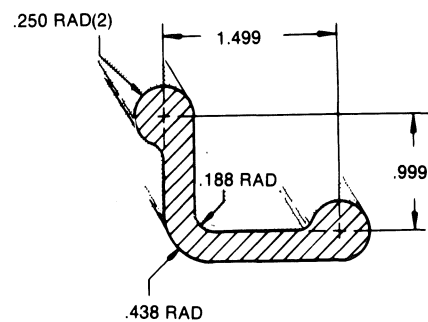
251-1563-00 FRAME SECTION
 COST:^a .044/in STATUS CODE:^a CS
 WEIGHT (lb/in): .015 ALLOY & TEMPER: 6063-T6



251-1565-00 GUIDE
 COST:^a .050/in STATUS CODE:^a CR
 WEIGHT (lb/in): .014 ALLOY & TEMPER: 6063-T6



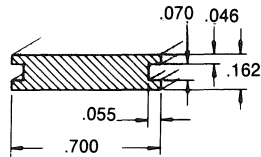
251-1566-00 PAPER GUIDE
 COST:^a .028/in STATUS CODE:^a CR
 WEIGHT (lb/in): .008 ALLOY & TEMPER: 6063-T5



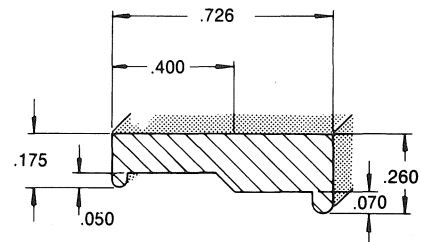
251-1567-00 FRAME SECTION
 COST:^a .118/in STATUS CODE:^a CS
 WEIGHT (lb/in): .090 ALLOY & TEMPER: 6061-T6511

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

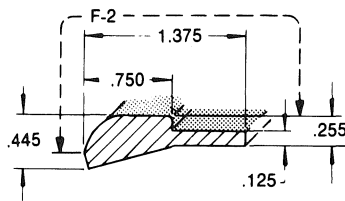
MISCELLANEOUS EXTRUSIONS (cont)



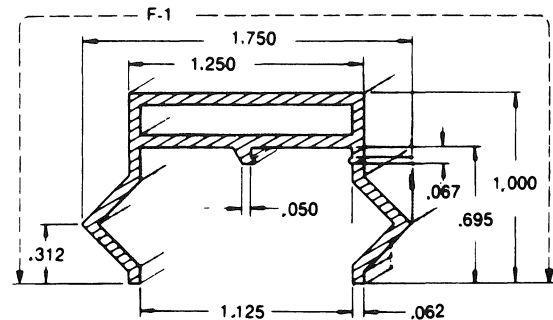
251-1568-00 COVER
 COST:^a .015/in STATUS CODE:^a CR
 WEIGHT (lb/in): .011 ALLOY & TEMPER: 6063-T6



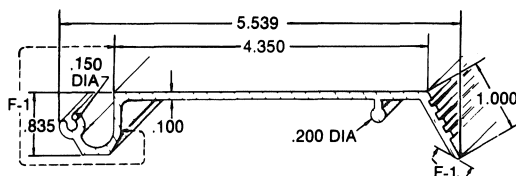
251-1569-00 TRANSISTOR CLAMP
 COST:^a .016/in STATUS CODE:^a CS
 WEIGHT (lb/in): .012 ALLOY & TEMPER: 6063-T6



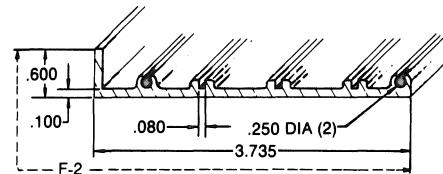
251-1572-00 HINGE SUPPORT
 COST:^a .063/in STATUS CODE:^a CR
 WEIGHT (lb/in): .033 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



251-1573-01 CARRIAGE RAIL
 COST:^a .115/in STATUS CODE:^a CS
 WEIGHT (lb/in): .030 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



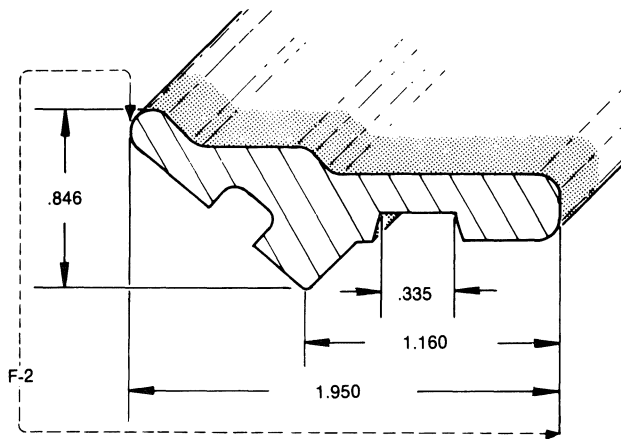
251-1574-00 COVER
 COST:^a .219/in STATUS CODE:^a CS
 WEIGHT (lb/in): .073 ALLOY & TEMPER: 6063-T6
 FINISH: F-2 Except as noted



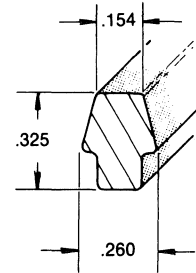
251-1576-00 CIRCUIT BOARD RETAINER
 COST:^a .133/in STATUS CODE:^a CS
 WEIGHT (lb/in): .052 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

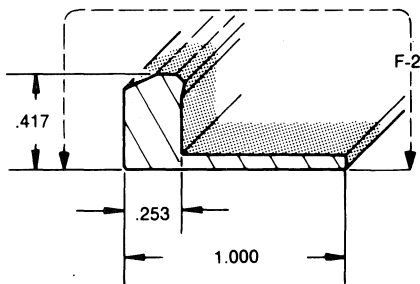
MISCELLANEOUS EXTRUSIONS (cont)



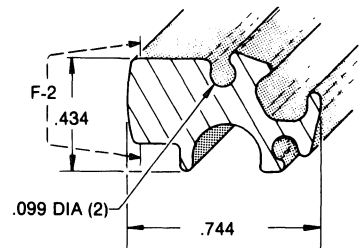
251-1577-00 SUPPORT
 COST:^a 1.302/in STATUS CODE:^a CS
 WEIGHT (lb/in): .060 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



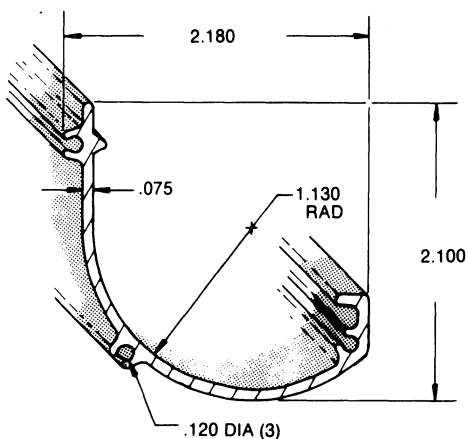
251-1578-00 CONTACT
 COST:^a .356/in STATUS CODE:^a CS
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



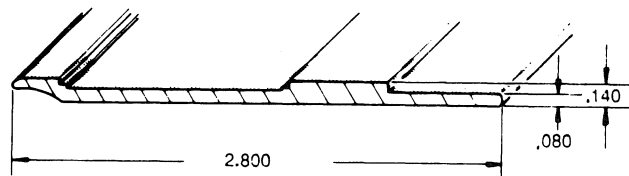
251-1581-00 BRACKET
 COST:^a .024/in STATUS CODE:^a CR
 WEIGHT (lb/in): .015 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



251-1582-00 HEATER BODY
 COST:^a .055/in STATUS CODE:^a CS
 WEIGHT (lb/in): .018 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



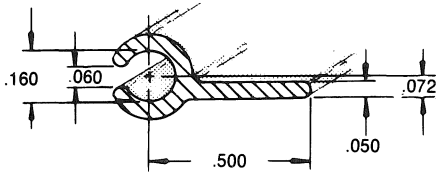
251-1584-00 FRAME SECTION
 COST:^a .084/in STATUS CODE:^a CS
 WEIGHT (lb/in): .037 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



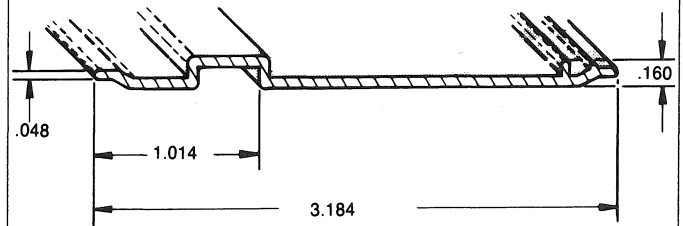
251-1585-00 FRAME SECTION
 COST:^a .093/in STATUS CODE:^a CS
 WEIGHT (lb/in): .023 ALLOY & TEMPER: 6061-T6
 FINISH: F-2 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

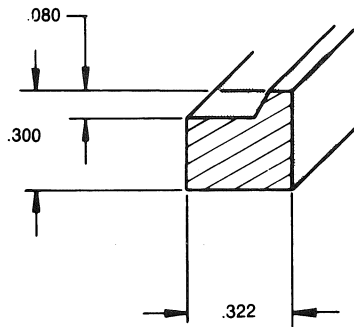
MISCELLANEOUS EXTRUSIONS (cont)



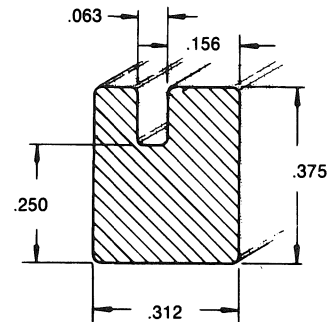
251-1593-00 BRACKET
 COST:^a .045/in STATUS CODE:^a CR
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6



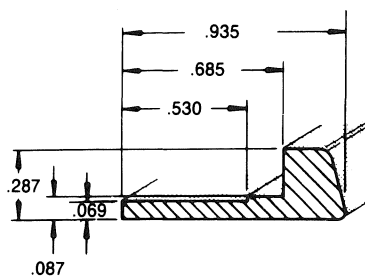
251-1600-00 RAIL
 COST:^a .117/in STATUS CODE:^a CR
 WEIGHT (lb/in): .022 ALLOY & TEMPER: 6063-T6



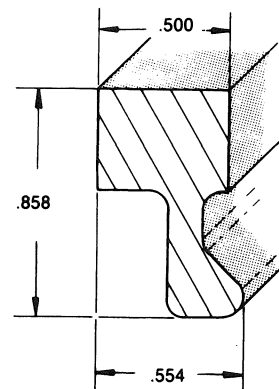
251-1605-00 GUIDE
 COST:^a .010/in STATUS CODE:^a CS
 WEIGHT (lb/in): .008 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



251-1606-00 SUPPORT BAR
 COST:^a .015/in STATUS CODE:^a CS
 WEIGHT (lb/in): .010 ALLOY & TEMPER: 6063-T6



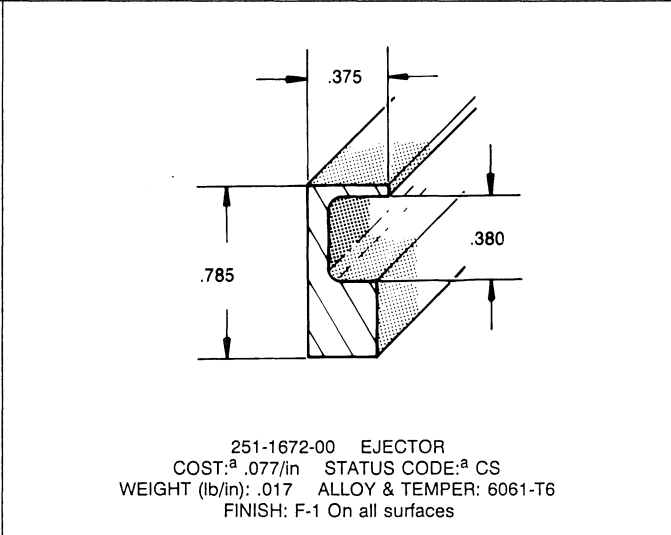
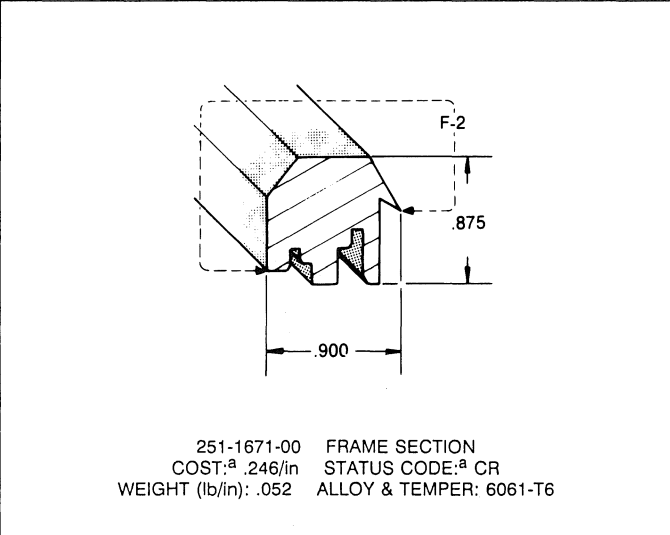
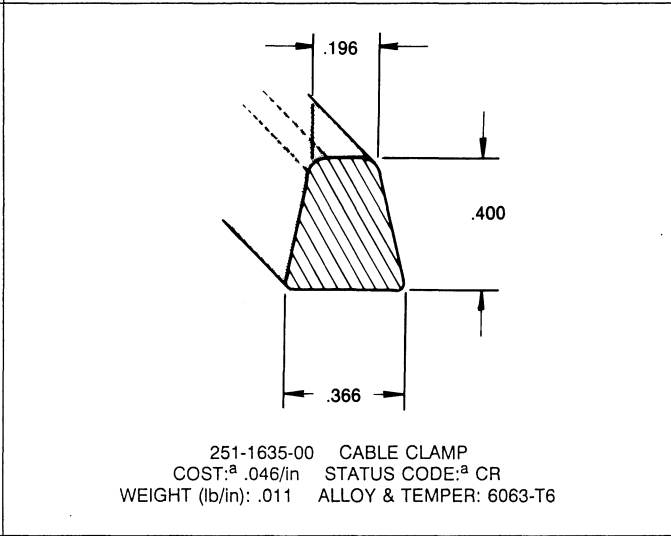
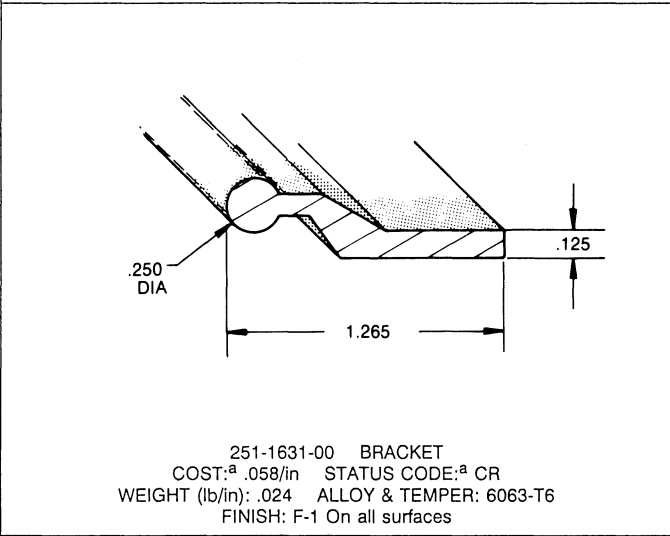
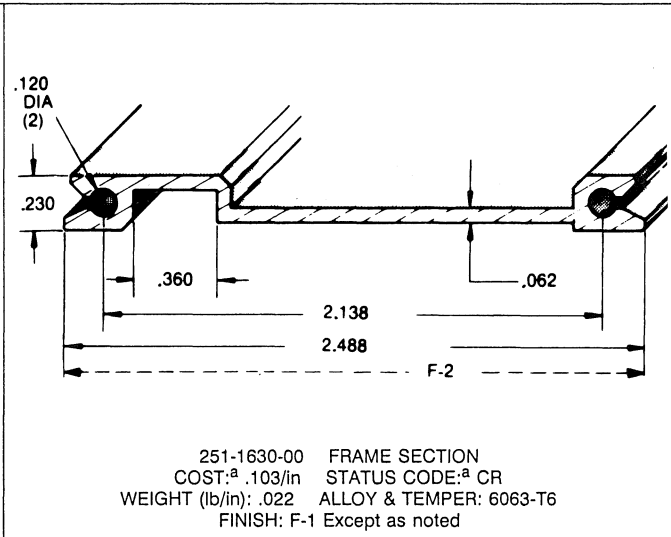
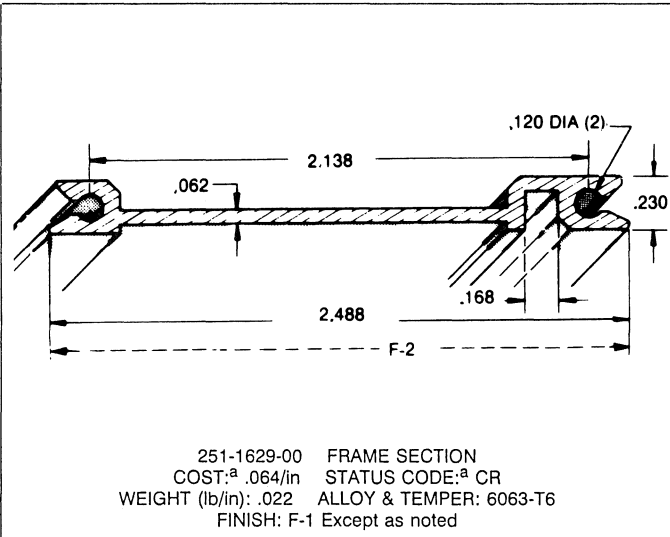
251-1615-00 PLUG-IN RETAINER
 COST:^a 30.563/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6



251-1616-00 HINGE HALF
 COST:^a .078/in STATUS CODE:^a CR
 WEIGHT (lb/in): .028 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 On all surfaces

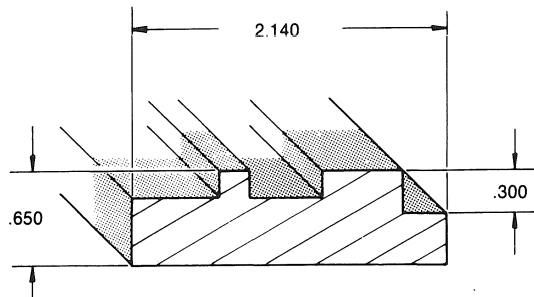
^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

MISCELLANEOUS EXTRUSIONS (cont)

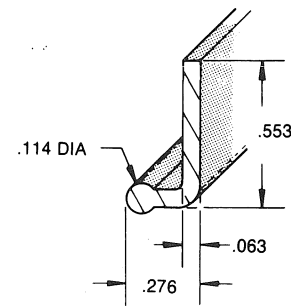


^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

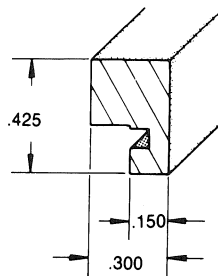
MISCELLANEOUS EXTRUSIONS (cont)



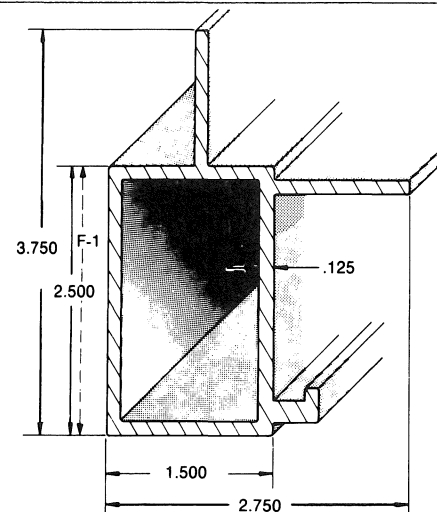
251-1673-00 FRAME SECTION
 COST:^a .332/in STATUS CODE:^a CR
 WEIGHT (lb/in): .101 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 On all surfaces



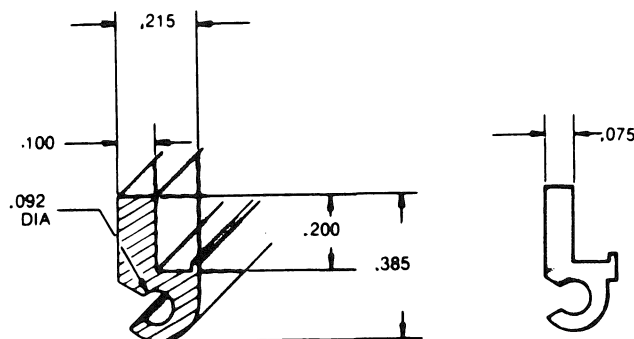
251-1678-00 BRACKET
 COST:^a .015/in STATUS CODE:^a CR
 WEIGHT (lb/in): .005 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



251-1680-00 CIRCUIT BOARD GUIDE
 COST:^a .048/in STATUS CODE:^a CS
 WEIGHT (lb/in): .011 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 On all surfaces

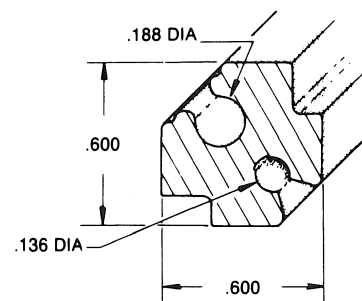


251-1685-00 HOUSING
 COST:^a .291/in STATUS CODE:^a CS
 WEIGHT (lb/in): .135 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



251-1691-00 HINGE
 STATUS CODE:^a NP
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces

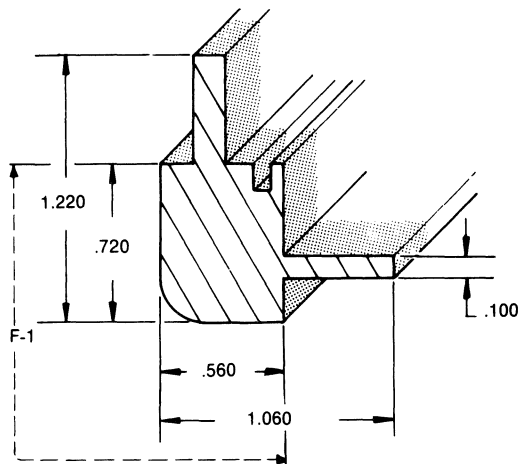
251-1691-01 HINGE
 STATUS CODE:^a OB
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



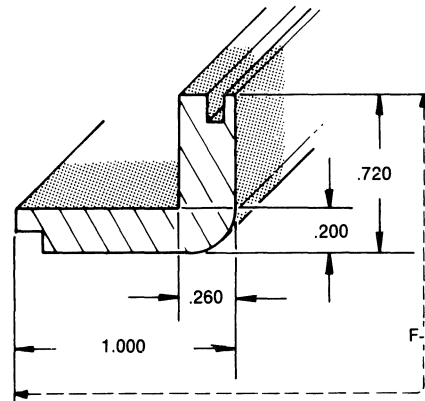
251-1697-00 PLATE SPACER
 COST:^a .064/in STATUS CODE:^a CR
 WEIGHT (lb/in): .021 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

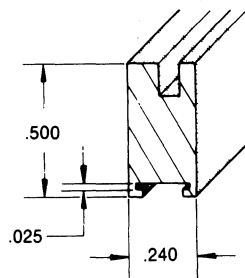
MISCELLANEOUS EXTRUSIONS (cont)



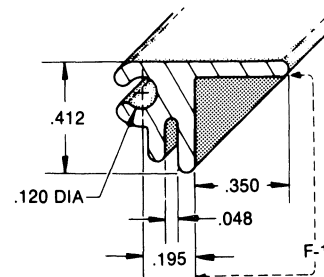
251-1699-00 FRAME SUPPORT
 COST:^a .151/in STATUS CODE:^a CS
 WEIGHT (lb/in): .050 ALLOY & TEMPER: 6063-T6



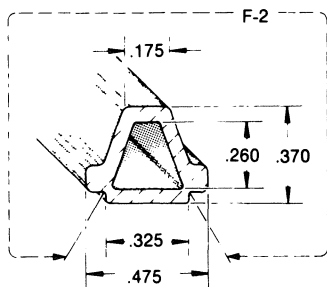
251-1700-00 FRAME SECTION
 COST:^a .077/in STATUS CODE:^a CS
 WEIGHT (lb/in): .026 ALLOY & TEMPER: 6063-T6



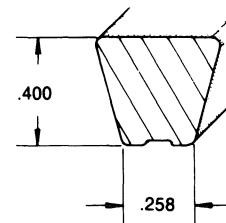
251-1701-00 CIRCUIT BOARD GUIDE
 COST:^a .031/in STATUS CODE:^a CS
 WEIGHT (lb/in): .010 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



251-1704-00 GUIDE
 COST:^a .030/in STATUS CODE:^a CR
 WEIGHT (lb/in): .010 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



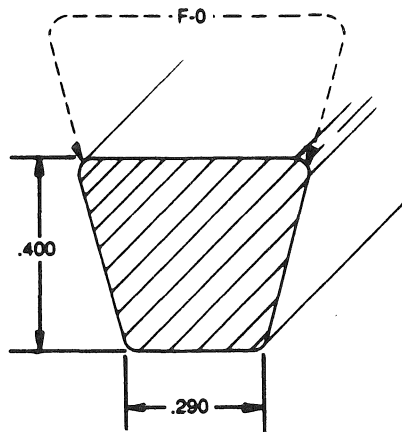
251-1705-00 FLIP STAND
 COST:^a .044/in STATUS CODE:^a CR
 WEIGHT (lb/in): .007 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



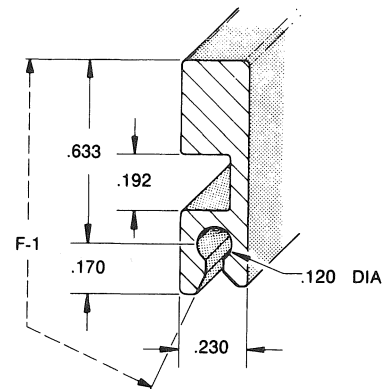
251-1709-00 CABLE CLAMP
 COST:^a .021/in STATUS CODE:^a CS
 WEIGHT (lb/in): .014 ALLOY & TEMPER: 6061-T6
 FINISH: F-1 On all surfaces

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

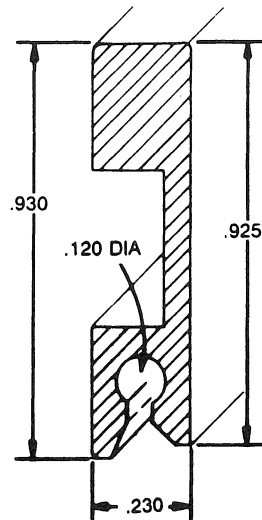
MISCELLANEOUS EXTRUSIONS (cont)



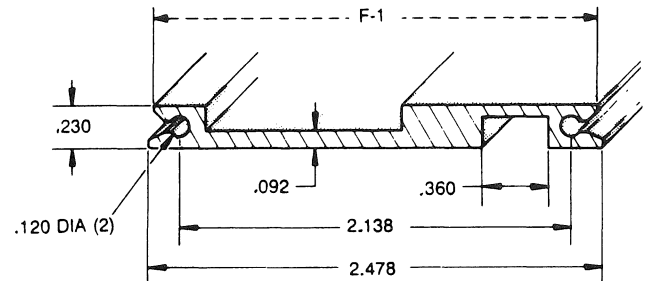
251-1710-00 CABLE CLAMP
 COST:^a .187/in STATUS CODE:^a CR
 WEIGHT (lb/in): .016 ALLOY & TEMPER: 6061-T6
 FINISH: F-1 Except as noted



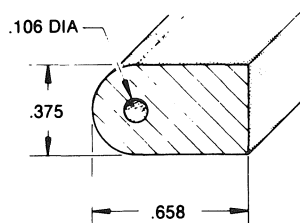
251-1713-00 FRAME SECTION
 COST:^a .069/in STATUS CODE:^a CR
 WEIGHT (lb/in): .012 ALLOY & TEMPER: 6063-T6



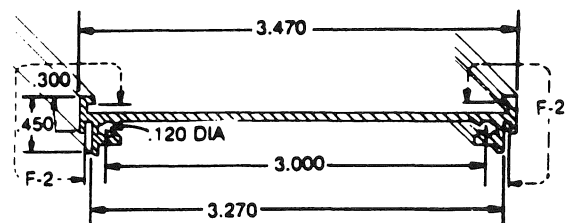
251-1714-00 FRAME SECTION
 COST:^a .063/in STATUS CODE:^a CR
 WEIGHT (lb/in): .014 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



251-1715-00 FRAME SECTION
 COST:^a 3.920/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6



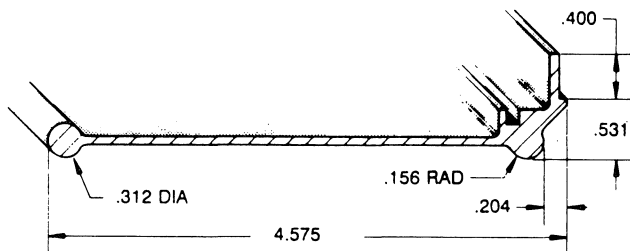
251-1733-00 SPACER
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6063-T5



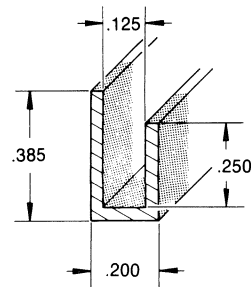
251-1735-00 FRAME SECTION
 COST:^a 4.500/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6061-T6
 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

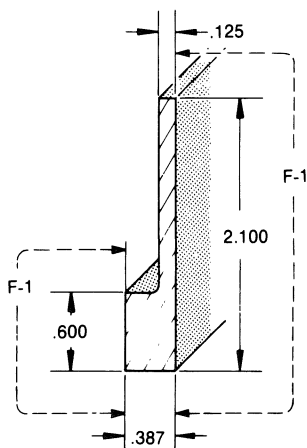
MISCELLANEOUS EXTRUSIONS (cont)



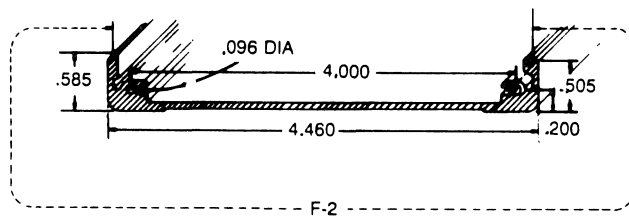
251-1740-00 FRAME SECTION
 COST:^a 2.683/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



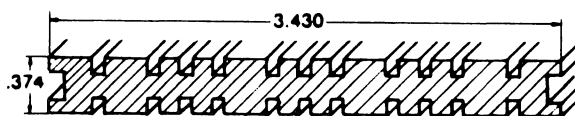
251-1747-00 HYBRID
 STATUS CODE:^a DL
 ALLOY & TEMPER: 6061-T6
 FINISH: F-1 Except as noted



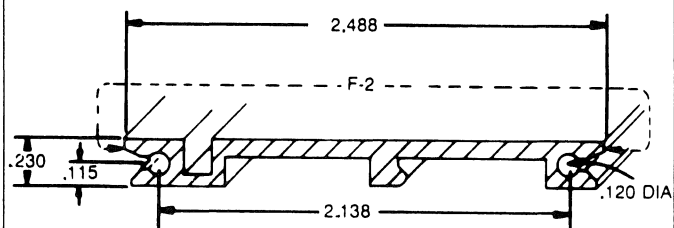
251-1748-00 TRANSISTOR BRACKET
 COST:^a .105/in STATUS CODE:^a CS
 WEIGHT (lb/in): .042 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



251-1750-00 CIRCUIT BOARD CASE
 COST:^a .147/in STATUS CODE:^a CR
 WEIGHT (lb/in): .048 ALLOY & TEMPER: 6063-T6
 FINISH: F-0 Except as noted



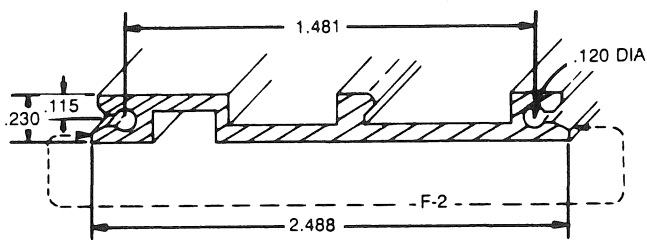
251-1763-00 FRAME SECTION, Safety Controlled
 STATUS CODE:^a CR
 ALLOY & TEMPER: 6061-T6



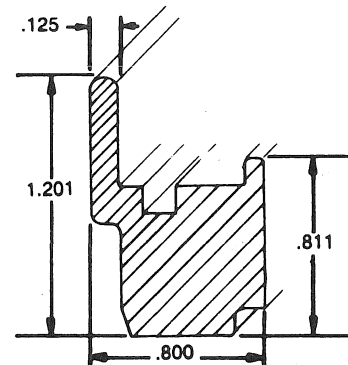
251-1776-00 FRAME SECTION, Safety Controlled
 COST:^a 1.250/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

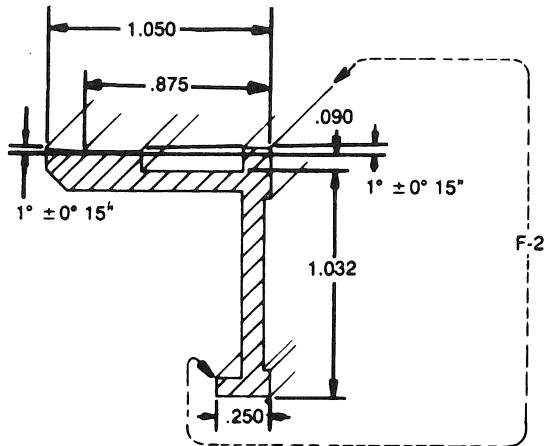
MISCELLANEOUS EXTRUSIONS (cont)



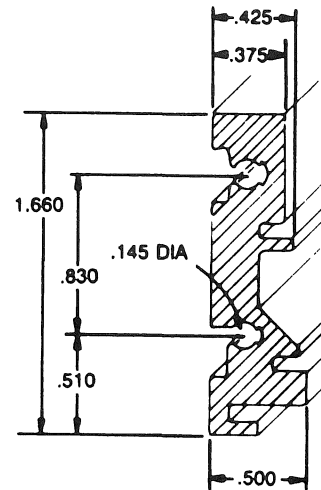
251-1777-00 FRAME SECTION
 COST:^a 1.250/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



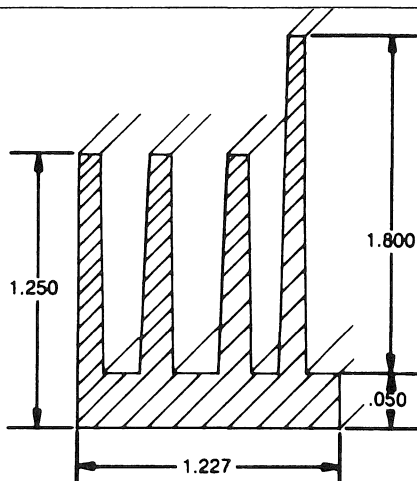
251-1780-00 CLAMP
 COST:^a .125/in STATUS CODE:^a CS
 WEIGHT (lb/in): .050 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



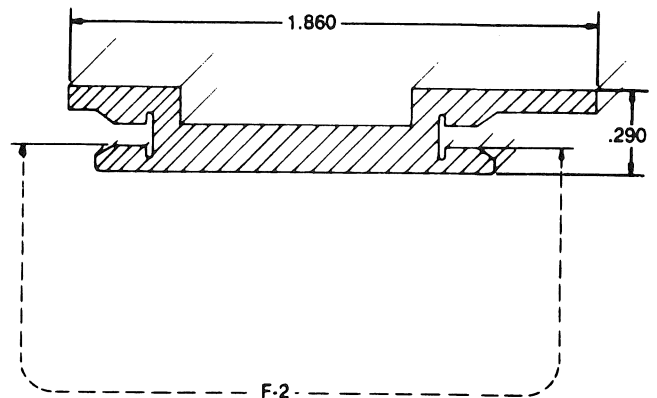
251-1785-00
 COST:^a 3.730/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 Except as noted



251-1791-00
 COST:^a 12.030/ea STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



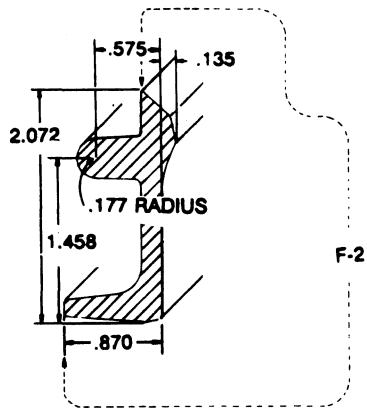
251-1792-00
 COST:^a 3.470/lb STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T6
 FINISH: F-1 On all surfaces



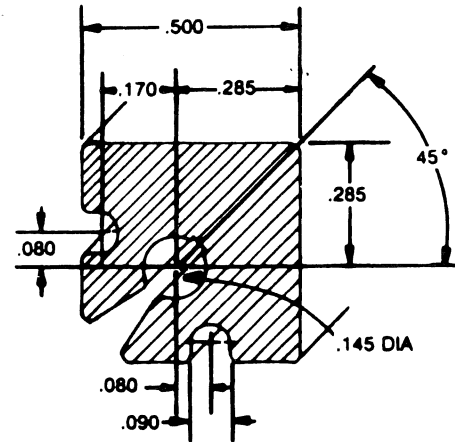
251-1793-00 SIDE RAIL
 STATUS CODE:^a CR
 ALLOY & TEMPER: 6063-T5
 FINISH: F-1 Except as noted

^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

MISCELLANEOUS EXTRUSIONS (cont)



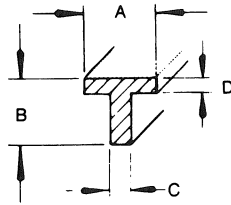
251-1795-00 LATCH HANDLE
 COST:^a .187/lb STATUS CODE:^a CR
 WEIGHT (lb/in): .076 ALLOY & TEMPER: 6063-T6



251-1805-00 RAIL
 COST:^a 1.309/ft STATUS CODE:^a CR
 WEIGHT (lb/ft): .220 ALLOY & TEMPER: 6061-T6
 FINISH: F-0 On all surfaces

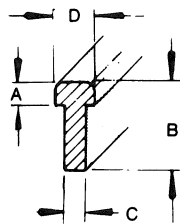
^a The nominal price (at time of printing) is listed as COST. For Status Codes, see tab marked CODES in the back of this catalog.

MISCELLANEOUS EXTRUSIONS (cont)



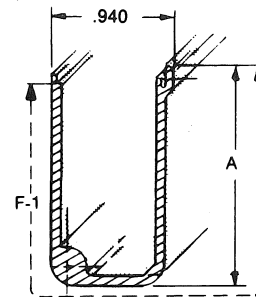
T-SHAPE

Dimensions				Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
A	B	C	D				Cost	ST
.562	.500	.094	.125	6063-T6	.010	251-1032-00	.018/in	CS
1.000	.500	.125	.125	6063-T6		251-0098-00		OB
1.000	.750	.125		6063-T5	.020	251-0171-00	.027/in	CR
1.000	.750	.125		6063-T6	.017	251-1354-00	.025/in	CS



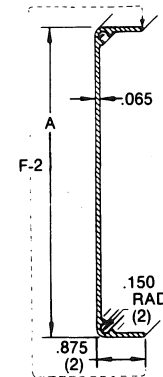
TRIM STRIP

Dimensions				Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
A	B	C	D				Cost	ST
.150	.650	.16	.300	6063-T6	.012	251-1090-00		OB
.156	1.000	.080	.280	6063-T6	.011	251-1332-00	.011/in	CS



PLUG-IN COVER FINISH: F-0 Except as noted

Dimension A	Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
1.350	6063-T5		251-0160-00		OB
1.690	6063-T5		251-0156-00		OB
2.030	6063-T5	.036	251-0161-00		OB

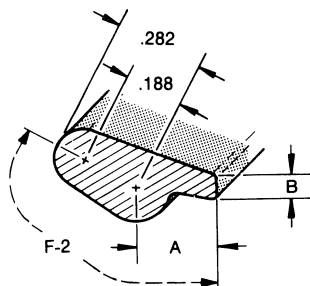


FRAME SECTION, FINISH: F-1 Except as noted

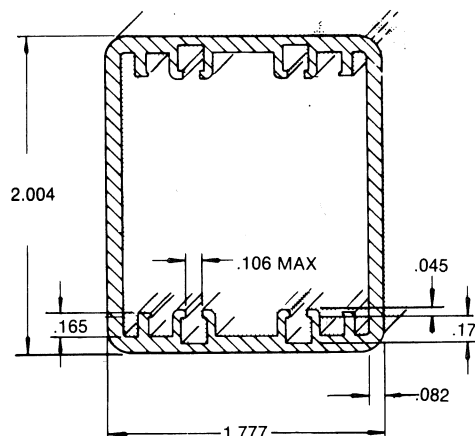
Dimension A	Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
5.200	6063-T6	.046	251-1491-00	.182/in	CR
5.700	6063-T6	.050	251-1490-00	.041/in	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

MISCELLANEOUS EXTRUSIONS (cont)

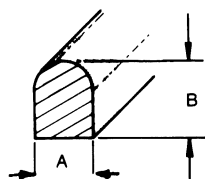


LATCH CATCH, FINISH: F-0 Except as noted

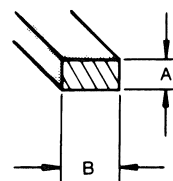


HOUSING, FINISH: F-1 On all exposed surfaces

Dimensions		Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a		Length (ft)	Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
A	B				Cost	ST					Cost	ST
.240	.070	6063-T6	.009	251-1386-00	.015/in	CR	3.000	6063-T6	.065	251-1015-00	3.130/ea	CR
.260	.082	6063-T6		251-1707-00		DL	12.000	6063-T6		251-1015-01	.286/in	CR



NUT BLOCK

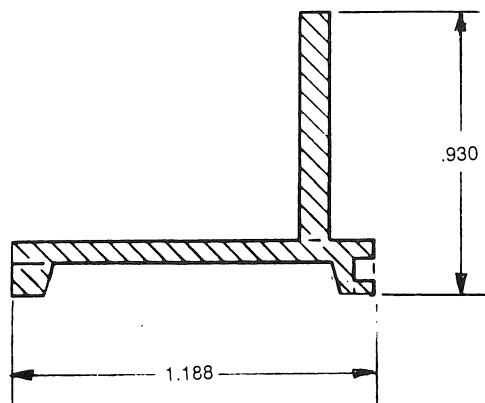


BAR, FINISH: F-0 On all surfaces

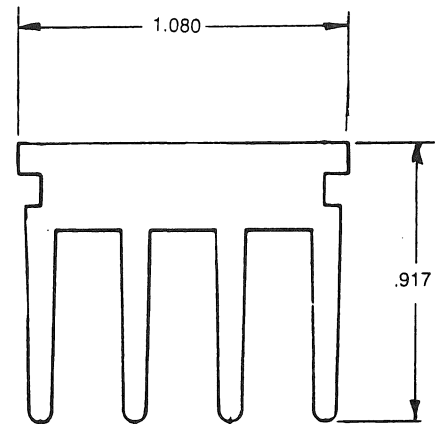
Dimensions		Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a		Dimensions		Alloy & Temper	Weight (lb/in)	Part Number	Codes ^a	
A	B				Cost	ST	A	B				Cost	ST
.250	.187	6063-T6	.009	251-1594-00	.015/in	CR	.125	.500	6061-T6	.006	251-0224-00	.019/in	CR
.412	.312	6061-T6	.012	251-0293-00	.023/in	CR	.156	.650	6063-T6	.010	251-1329-00	.014/in	CS
							.250	.500	6063-T1		251-1687-00		DL
							.312	3.250	2024-T351	.102	251-1116-00	.463/in	CS
							.340	.645	6063-T6	.021	251-1482-00	.058/in	CR
							.375	.375	6061-T6		251-0193-00		OB
							.375	.375	6063-T5	.014	251-0183-00	.040/in	CR
							.375	.545	6063-T6	.021	251-1451-00	.032/in	CR
							.375	.700	6063-T6	.026	251-1649-00	.066/in	CS
							.479	.600	2024-T4	.029	251-1095-00	.110/in	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

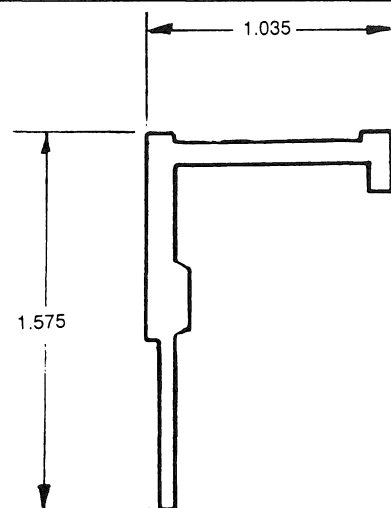
MISCELLANEOUS EXTRUSIONS (cont)



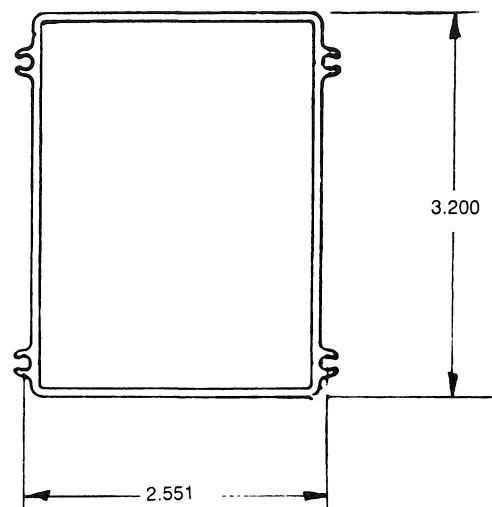
251-1684-00
 COST^a: .489/in STATUS CODE^a: CR
 ALLOY & TEMPER: 6063-T6



251-1799-00 SPECIAL SHAPED SECTION
 COST^a: .120/in STATUS CODE^a: CR
 ALLOY & TEMPER: 6063-T6



251-1797-00 SPECIAL SHAPED SECTION
 STATUS CODE^a: EN
 ALLOY & TEMPER: 6063-T6



251-1825-00 CHART RECORDER
 COST^a: .245/in STATUS CODE^a: CR
 ALLOY & TEMPER: 6063-T6

^a The nominal price (at time of printing) is listed as the cost. For Status Codes, see tab marked CODES in the back of this catalog.

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251-1353-00	6-56	251-1498-00	6-63	251-1598-00	6-13	251-1763-00	6-76
251-1354-00	6-79	251-1499-00	6-63	251-1599-00	6-14	251-1776-00	6-76
251-1360-00	6-56	251-1500-00	6-63	251-1600-00	6-71	251-1777-00	6-77
251-1361-00	6-56	251-1501-01	6-63	251-1605-00	6-71	251-1780-00	6-77
251-1365-00	6-9	251-1502-00	6-64	251-1606-00	6-71	251-1785-00	6-77
251-1366-00	6-9	251-1503-00	6-64	251-1609-00	6-4	251-1791-00	6-77
251-1367-00	6-56	251-1504-00	6-64	251-1611-00	6-14	251-1792-00	6-77
251-1369-00	6-56	251-1505-00	6-64	251-1615-00	6-71	251-1793-00	6-77
251-1370-00	6-56	251-1506-00	6-64	251-1616-00	6-71	251-1795-00	6-78
251-1371-00	6-57	251-1507-00	6-11	251-1622-00	6-14	251-1797-00	6-81
251-1372-00	6-57	251-1510-00	6-64	251-1624-00	6-14	251-1799-00	6-81
251-1375-00	6-57	251-1512-00	6-18	251-1629-00	6-72	251-1805-00	6-78
251-1376-00	6-57	251-1513-00	6-18	251-1630-00	6-72	251-1825-00	6-81
251-1377-00	6-9	251-1514-00	6-65	251-1631-00	6-72		
251-1380-00	6-57	251-1515-00	6-65	251-1633-00	6-4		
251-1386-00	6-80	251-1517-00	6-65	251-1635-00	6-72		
251-1390-00	6-10	251-1518-00	6-65	251-1636-00	6-19		
251-1393-00	6-57	251-1519-00	6-65	251-1637-00	6-4		
251-1394-00	6-58	251-1520-00	6-65	251-1640-00	6-15		
251-1396-00	6-58	251-1521-00	6-66	251-1649-00	6-80		
251-1397-00	6-58	251-1522-00	6-66	251-1650-00	6-19		
251-1423-00	6-58	251-1523-00	6-66	251-1656-00	6-15		
251-1424-00	6-58	251-1529-00	6-66	251-1671-00	6-72		
251-1425-00	6-58	251-1530-00	6-66	251-1672-00	6-72		
251-1428-00	6-59	251-1531-00	6-66	251-1673-00	6-73		
251-1433-00	6-10	251-1532-00	6-67	251-1675-00	6-3		
251-1434-00	6-59	251-1534-00	6-67	251-1678-00	6-73		
251-1435-00	6-59	251-1538-00	6-67	251-1680-00	6-73		
251-1444-00	6-59	251-1540-00	6-67	251-1681-00	6-3		
251-1447-00	6-59	251-1541-00	6-67	251-1682-00	6-19		
251-1449-00	6-59	251-1545-00	6-11	251-1684-00	6-81		
251-1451-00	6-80	251-1549-00	6-12	251-1685-00	6-73		
251-1452-00	6-60	251-1550-00	6-12	251-1687-00	6-80		
251-1453-00	6-60	251-1552-00	6-20	256-1691-00	6-73		
251-1454-00	6-10	251-1553-00	6-67	251-1691-01	6-73		
251-1455-00	6-10	251-1554-00	6-68	251-1697-00	6-73		
251-1456-02	6-60	251-1555-00	6-18	251-1698-00	6-3		
251-1457-00	6-11	251-1556-00	6-18	251-1699-00	6-74		
251-1458-00	6-60	251-1560-00	6-68	251-1700-00	6-74		
251-1461-00	6-60	251-1563-00	6-68	251-1701-00	6-74		
251-1462-00	6-60	251-1565-00	6-68	251-1703-00	6-4		
251-1464-00	6-61	251-1566-00	6-68	251-1704-00	6-74		
251-1465-00	6-61	251-1567-00	6-68	251-1705-00	6-74		
251-1469-00	6-61	251-1568-00	6-69	251-1706-00	6-15		
251-1470-00	6-61	251-1569-00	6-69	251-1707-00	6-80		
251-1471-00	6-18	251-1572-00	6-69	251-1709-00	6-74		
251-1472-00	6-61	251-1573-01	6-69	251-1710-00	6-75		
251-1475-00	6-61	251-1574-00	6-69	251-1713-00	6-75		
251-1476-00	6-62	251-1575-00	6-12	251-1714-00	6-75		
251-1477-00	6-62	251-1576-00	6-69	251-1715-00	6-75		
251-1478-00	6-62	251-1577-00	6-70	251-1726-00	6-20		
251-1479-00	6-11	251-1578-00	6-70	251-1730-00	6-20		
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SECTION 7

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062-3616-00	Basic Environmental Test Limits for Materials and Components
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INDUSTRY STANDARDS REFERENCE

ASTM B221	Aluminum & Aluminum Alloy Extruded Bar Rod, Wire, Shape & Tube - Contains specs for chemical composition, mechanical properties, and corrosion tests, but not for dimensional tolerances. Applies to extruded products only.
ASTM B209	Aluminum & Aluminum Alloy Sheet & Plate - Contains specs for chemical composition, mechanical properties, and corrosion tests for flat wrought products. Dimensional specs are for ASME pressure vessel applications only.
ASTM B210	Aluminum Alloy Drawn Seamless Tubes - Contains specs for chemical composition, mechanical properties, and minimum formability requirements for drawn seamless tube only (not extruded). Does not contain dimensional tolerances.
ASTM B211	Aluminum Alloy Bar, Rod, & Wire - Contains specs for chemical composition & mechanical properties for wrought or drawn products only (not extruded). Does not contain dimensional tolerances.
ASTM B373	Aluminum Foil for Capacitors - Contains specs for chemical composition, mechanical properties, electrical properties, and dimensional tolerances for foil from .00017 to .00050 inches thick to be used in the manufacture of capacitors.
ANSI 35.2	Dimensional Tolerances for Aluminum Mill Products - Contains gauge, width, length, straightness, bow, and twist tolerances for all mill products and is references by all ASTM specs above. Does not contain chemical composition limits or mechanical properties.

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ALUMINUM

WIRE

Description	Alloy & Temper ^a	Specification ASTM ^a	Part Number	Codes ^b	
				Cost	ST
.001 Diameter x 80 Feet Long	99 AL, 1 MG		251-1508-00	.208 ft	CR
.003 Diameter			251-1838-00	.322 ft	EN
.025 x .750 x 12 Feet Long	5005-H14	B209	251-0075-03	.150 oz	CS
.030 x 3 Feet Long			251-1781-00	1.650 ea	PP
.050 x .530 x 12 Feet Long	5005-H14 & H34	B209	251-0073-10	.146 oz	CR
.062 Diameter			251-1773-00	.714 gr	CR
.063 x .490	5005-H34	B211	251-0077-06	.138 oz	CS
.094 Diameter Round x 3 Feet Long	5556-H14	B211	251-0054-00	.003 in	CR
.125 Diameter x 12 Feet Long	2011-T3	B211	251-1168-00	.004 in	CR
.125 Diameter x 12 Feet Long	7075-T6	B211	251-1202-00	.007 in	CR
.125 Diameter x 12 Feet Long	6061-T6	B211	251-1341-00	.003 in	CR
.156 Diameter x 12 Feet Long	2011-T3	B211	251-0019-00	.005 in	CR
.1875 Diameter x 12 Feet Long	2024-T4	B211	251-1099-00		OB
.188 Diameter x 12 Feet Long	6061-T6	B211	251-1723-00	.009 in	CR
.188 Diameter x 12 Feet Long	2011-T3	B211	251-0020-00	.006 in	CR
.188 Hexagon x 12 Feet Long	2017-T4	B211	251-1207-00	.018 in	CR
.250 Diameter x 12 Feet Long	2011-T3	B211	251-0021-00	.011 in	CR
.250 Diameter x 12 Feet Long	6061-T6	B211	251-1091-00	.011 in	CR
.250 Diameter x 12 Feet Long	6262-T9	B211	251-0222-00	.011 in	CR
.250 Hexagon x 12 Feet Long	2011-T3	B211	251-0009-00	.016 in	CR
.250 Square	6063-T5	B221	251-1285-00	.009 in	CR
.250 Square x 12 Feet Long	2011-T3	B211	251-0005-00	.036 in	CR
.250 x .312 x 12 Feet Long	6061-T6	B221	251-1436-00	.018 in	CR
.265 Diameter x 12 Feet Long	7075-T6	B211	251-1429-00	.014 in	CS
.312 Diameter x 12 Feet Long	6262-T9	B211	251-0022-00	.016 in	CR
.312 Hexagon x 12 Feet Long	2011-T3	B211	251-0101-00	.040 in	CR
.312 Square x 12 Feet Long	2024-T4	B211	251-0103-00	.049 in	CR

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

BAR

Description	Alloy & Temper ^a	Specification ASTM ^a	Part Number	Codes ^b	
				Cost	ST
.125 x .500 x 16 Feet Long	6063-T52	B221	251-0148-00	.021 in	CR
.125 x .750 x 12 Feet Long	6063-T5	B221	251-0011-00	.019 in	CR
.125 x 1.500 x 12 Feet Long	2024-T4	B211	251-1087-00	.103 in	CR
.188 x .500 x 12 Feet Long	2024-T4	B211	251-0087-00	.093 in	CR
.200 x .385 x 12 Feet Long	6061-T6	B211	251-1335-00	.034 in	CR
.250 x .375 x 6 Feet Long	6063-T6	B221	251-0253-00	.027 in	CR
.250 x .500 x 14 Feet 3 Inches Long	6061-T6	B221	251-0174-00		OB
.250 x .500 x 12 Feet Long	6061-T6	B211	251-1437-00	.028 in	CR
.250 x .500 x 16 Feet Long	6063-T5	B221	251-0016-00	.024 in	CR
.250 x .625 x 12 Feet Long	2024-T4	B211	251-0109-00	.074 in	CR
.250 x .750 x 12 Feet Long	6061-T6	B221	251-1273-00	.026 in	CR
.250 x 1.000 x 12 Feet Long	6061-T6	B221	251-0255-00	.033 in	CR
.250 x 1.250 x 12 Feet Long	6061-T6	B221	251-1536-00	.043 in	CR
.250 x 1.500 x 12 Feet Long	6061-T6511	B221	251-1211-00	.064 in	CR
.250 x 1.750 x 16 Feet Long	6063-T5	B221	251-0213-00	.090 in	CR
.250 x 2.500 x 12 Feet Long	6061-T6511	B221	251-1212-00	.130 in	CR
.250 x 2.500 x 12 Feet Long	6061-T6	B211	251-1443-00		NP
.250 x 7.500 x 12 Feet Long	5052-H32	B209	251-0125-01	.182 in	CR
.312 x .750 x 12 Feet Long	2024-T4	B221	251-0254-00	.125 in	CR
.312 x 1.250 x 12 Feet Long	6061-T6	B221	251-1604-00	.061 in	CR
.330 x .750 x 12 Feet Long	6061-T6	B211	251-1427-00	.034 in	CS
.375 Diameter x 12 Feet Long	2011-T3	B211	251-1001-00	.029 in	CR
.375 Diameter x 12 Feet Long	6063-T5	B221	251-1083-00	.023 in	CR
.375 Diameter x 12 Feet Long	6262-T9	B211	251-0023-00	.040 in	CR
.375 Hexagon x 12 Feet Long	6262-T9	B211	251-0175-00	.047 in	CR
.375 Square x 12 Feet Long	6061-T6	B211	251-0006-00	.099 in	CR
.375 x .500 x 12 Feet Long	2024-T4	B211	251-0015-00	.091 in	CR
.375 x .750 x 12 Feet Long	6061-T6	B221	251-1092-00	.054 in	CR
.375 x .750 x 12 Feet Long	6063-T5	B221	251-1027-00	.051 in	CR
.375 x .875	6063-T6	B221	251-1677-00	.148 in	CS
.375 x 1.000 x 12 Feet Long	6063-T5	B221	251-1287-00	.059 in	CR
.375 x 3.000 x 12 Feet Long	2024-T4	B221	251-1118-00	.073 in	CR
.375 x 6.000 x 12 Feet Long	6061-T6	B209	251-1559-00	1.539 lb	CR
.375 x 6.000	6061-T6	B209	251-1134-00		OB
.375 x 8.000 x 9.250 Inches Long	6061-T6	B211	251-1632-00	2.740 lb	CR
.437 Diameter x 12 Feet Long	6262-T9	B211	251-1081-00	.047 in	CR
.437 Diameter x 12 Feet Long	6063-T6	B221	251-0281-00	.031 in	CR
.438 Square x 12 Feet Long	2024-T4	B211	251-0158-00	.078 in	CS
.500 Diameter x 12 Feet Long	2011-T3	B211	251-0024-00	.044 in	CR
.500 Diameter x 12 Feet Long	6262-T9	B211	251-0236-00	.063 in	CR
.500 Diameter x 12 Feet Long	7075-T6	B211	251-1188-00	.073 in	CR
.500 Hexagon x 12 Feet Long	2011-T3	B211	251-0010-00	.052 in	CR
.500 Square x 12 Feet Long	6061-T651	B221	251-1144-00	.032 in	CR
.500 x .750 x 12 Feet Long	6061-T6	B221	251-1355-00	.080 in	CR
.500 x 1.000 x 12 Feet Long	6061-T651		251-1863-00	1.000 in	CR
.500 x 1.000 x 12 Feet Long	6061-T6	B221	251-0286-00	.091 in	CR
.500 x 1.000 x 12 Feet Long	7075-T651	B209	251-1808-00	.321 in	CR
.500 x 1.000 x 12 Feet Long	6061-T6	B211	251-1439-00	.072 in	CR
.500 x 1.500 x 12 Feet Long	6061-T6	B221	251-1145-00	.149 in	CR
.500 x 2.500 x 12 Feet Long	6061-T6	B221	251-0209-00	.233 in	CR
.500 x 2.500 x 12 Feet Long	2024-T351	B221	251-1334-00	.314 in	CR
.500 x 3.000 x 12 Feet Long	2024-T351	B221	251-1119-00	.446 in	CR
.500 x 5.796 x 12 Feet Long	6061-T651	B209	251-1854-00	.702 in	CR
.562 Diameter x 12 Feet Long	2011-T3	B211	251-0025-00	.040 in	CR
.562 Diameter x 12 Feet Long	6262-T9	B211	251-0287-00	.045 in	CR
.562 Hexagon x 12 Feet Long	2011-T3	B211	251-0129-00	.084 in	CR
.625 Diameter x 12 Feet Long	2011-T3	B211	251-0127-00	.060 in	CR
.625 Diameter x 12 Feet Long	6262-T9	B211	251-0296-00	.060 in	CR
.625 Hexagon x 12 Feet Long	2011-T3	B211	251-1276-00	.067 in	CR
.625 x 1.000 x 12 Feet Long	2024-T351	B211	251-1547-00	.148 in	CR

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

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ALUMINUM

BAR (cont)

Description	Alloy & Temper ^a	Specification ASTM ^a	Part Number	Codes ^b	
				Cost	ST
.625 x 1.250 x 12 Feet Long	2024-T351	B211	251-1548-00	.162 in	CS
.625 x 1.500 x 4 Feet Long	6061-T6		251-1820-00	.190 in	CR
.625 x 2.085 x 2.665	2024-T351	B209	251-1313-00	3.070 ea	CR
.625 x 8.250 x 8.250	6061-T6	B211	251-1702-00		DL
.750 Diameter x 12 Feet Long	6262-T9	B211	251-0074-00	.143 in	CR
.750 Diameter x 12 Feet Long	6061-T6	B211	251-0223-00	.080 in	CR
.750 Diameter x 12 Feet Long	7075-T6	B211	251-0248-00	.192 in	CR
.750 Square x 12 Feet Long	2024-T4	B211	251-1459-00		OB
.750 x 1.000 x 12 Feet Long	6061-T6	B221	251-0249-00	.107 in	CR
.750 x 1.500 x 12 Feet Long	6061-T6	B209	251-1852-00	.237 in	PP
.750 x 2.000 x 12 Feet Long	6061-T6		251-1812-00	.278 in	CR
.750 x 2.500 x 12 Feet Long	6061-T6	B211	251-1440-01	.271 in	CR
.750 x 2.500 x 12 Feet Long	2024-T351	B211	251-1483-00	.917 in	CR
.750 x 3.625 x 12 Feet Long	6061-T6	B211	251-1440-00	.601 in	CR
.750 x 4.500 x 12 Feet Long	2024-T351	B221	251-1279-00	1.053 in	CR
.750 x 5.000 x 12.500	2024-T351	B221	251-1280-00	.347 si	CR
.750 x 11.125 x 36.500 Inches Long	6061-T6	B211	251-1657-00		DL
.812 Diameter x 12 Feet Long	2011-T3	B211	251-0081-00	.088 in	CS
.875 Diameter x 12 Feet Long	2011-T3	B211	251-0026-00		DL
.875 Diameter x 12 Feet Long	6262-T9	B211	251-1018-00	.110 in	CR
.875 x 1.250 x 12 Feet Long	6061-T6	B221	251-1537-00		DL
1.000 Diameter x 12 Feet Long	2011-T3	B211	251-0027-00	.141 in	CR
1.000 Hexagon x 12 Feet Long	6262-T9	B211	251-0284-00	.196 in	CS
1.000 Square x 12 Feet Long	6061-T6	B211	251-1602-00	.168 in	CR
1.000 Dodecagon	7075-T6	B221	251-0259-00	1.165 lb	EN
1.000 x 1.500 x 12 Feet Long	6061-T6	B221	251-1319-00	.186 in	CR
1.000 x 2.000 x 12 Feet Long	6063-T6	B221	251-1363-00	.261 in	CR
1.000 x 2.000 x 12 Feet Long	2024-T4	B211	251-1821-00		CR
1.000 x 3.000 x 12 Feet Long	2024-T4	B211	251-1359-00	1.099 in	CR
1.000 x 3.000 x 12 Feet Long	2024-T351	B211	251-1389-00	.998 in	CR
1.062 Diameter x 12 Feet Long	6262-T9	B211	251-0152-00	.745 in	CR
1.125 Diameter x 12 Feet Long	6262-T9	B211	251-0289-00	.250 in	CR
1.250 Diameter x 12 Feet Long	2011-T3	B211	251-3013-00	.244 in	CS
1.250 Square x 12 Feet Long	6061-T6511	B221	251-1204-00	.202 in	CR
1.250 x 6.125 x 11.250 Inches Long	7075-T651	B211	251-1571-00	.469 si	CR
1.410 x 6.125 x 11.250 Inches Long	7075-T651		251-1608-00	2.967 in	CR
1.500 x 2.500 x 12 Feet Long	6261-T6	B209	251-1853-00	.784 in	CR
1.500 Diameter x 12 Feet Long	6262-T9	B211	251-0221-00	.422 in	CR
1.625 Diameter x 12 Feet Long	6262-T9	B211	251-0214-00	3.000 lb	CR
1.750 x 4.250 x 12 Feet Long	6061-T6	B221	251-1441-00	1.630 in	CR
2.000 Diameter x 12 Feet Long	6262-T9	B221	251-1274-00	.468 in	CS
2.375 Diameter x 12 Feet Long	6061-T6	B211	251-1638-00	1.908 in	CR
2.625 Diameter x 12 Feet Long	6061-T6	B211	251-1639-00		DL

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FOIL (ASTM B373^a)

Description	Alloy & Temper	Part Number	Codes ^b	
			Cost	ST
.00020 x .375	1145-0	251-1289-00	.101 oz	DL
.00020 x .500	1145-H19	251-0147-00		DL
.00020 x .688	1145-H19	251-0200-00		DL
.00020 x 4.000	Polyester Laminated	251-1283-00		CR
.00025 x .250	1145-H19	251-1022-00	.101 oz	DL
.00025 x .3125	1145-H19	251-1275-00		DL
.00025 x .375	1145-H19	251-1047-00		DL
.00025 x .562	1145-H19	251-1240-00		DL
.00025 x .625	1145-H19	251-0207-00		DL
.00025 x 1.000	1145-H19	251-0250-00		DL
.00025 x 1.500	1145-H19	251-0146-00		DL
.00025 x 2.000	1145-H19	251-0151-00		DL
.00040 x .250	1145-0	251-1288-00		DL
.00040 x .500	1145-H19	251-0130-00		DL
.00040 x .625	1145-H19	251-0055-00		DL
.00040 x .875	1145-H19	251-0086-00	.030 in	OB
.00040 x 1.000	1145-19	251-0056-00		OB
.00040 x 2.000	1145-19	251-0057-00		OB
.00300 x 6.720	Adhesive Back, 60 Yard Roll	251-1250-00		CR

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STRIP (ASTM B209^a)

Description	Alloy & Temper	Part Number	Codes ^b		
			Cost		ST
.025 x 1.832 Coil Stock	5005-H34	251-0075-08	3.980	lb	CR
.025 x 2.005 Coil Stock	5005-H34	251-0075-02	1.910	lb	CR
.025 x 2.948 Coil Stock	5005-H34	251-0075-01	1.700	lb	OT
.025 x 3.250 Coil Stock	5005-H34	251-0075-07	1.423	lb	CS
.025 x 4.875 Coil Stock	5005-H34/H14	251-0075-04	1.700	lb	CR
.025 x 5.500 Coil Stock	5052-H34	251-1190-01			DL
.025 x 6.000 Coil Stock	5005-H34/H14	251-0075-06	1.306	lb	CS
.025 x 6.125 Coil Stock	5005-H34	251-1253-00	3.180	lb	CR
.032 x 5.000 Coil Stock	5052-H32	251-1690-00	2.850	lb	CR
.040 x 2.907 Coil Stock	5005-H34/H14	251-0076-01	2.960	lb	CR
.040 x 3.500 Coil Stock	5052-H34	251-1596-00	1.176	lb	CR
.040 x 4.125 Coil Stock	5005-H34/H14	251-0076-03	1.410	lb	CS
.040 x 4.875 Coil Stock	5052-H34	251-0202-01	5.160	lb	CR
.040 x 6.000 Coil Stock	5005-H34/H14	251-0076-04	1.512	lb	CR
.040 x 7.150 Coil Stock	5052-H34	251-0202-03			DL
.040 x 9.400 Coil Stock	5052-H32	251-0202-04	.099	oz	CR
.050 x 1.375 Coil Stock	5052-H34	251-0179-02	1.469	lb	CR
.050 x 1.555 Coil Stock	5005-H34/H14	251-0073-07	1.313	lb	CR
.050 x 2.375 Coil Stock	5005-H34/H14	251-0073-04	1.241	lb	CS
.050 x 4.250 Coil Stock	5005-H34/H14	251-0073-06	1.460	lb	CS
.050 x 4.950 Coil Stock	5005-H34	251-0073-11	.010	in	CR
.050 x 6.312 Coil Stock	5052-H34	251-0179-01	1.940	lb	OT
.050 x 6.765 Coil Stock	5005-H34/H14	251-0073-01	2.930	lb	CR
.050 x 7.250 Coil Stock	5005-H34/H14	251-0073-09	1.770	lb	OT
.050 x 7.500 Coil Stock	5005-H34/H14	251-0073-02	1.185	lb	CS
.050 x 9.250 Coil Stock	5052-H34	251-0179-03			DL
.050 x 11.750 Coil Stock	5005-H34/H14	251-0073-05	1.172	lb	CS
.063 x 1.354 Coil Stock	5052-H34	251-0077-08	1.580	lb	CR
.063 x 1.840 Coil Stock	5005-H34/H14	251-0077-05	2.810	lb	CR
.063 x 2.250 Coil Stock	5052-H34	251-0180-03	2.400	lb	CR
.063 x 4.500 Coil Stock	5052-H34	251-0180-04	1.314	lb	CR
.063 x 6.000 Coil Stock	5005-H34/H14	251-0077-04	1.139	lb	CS
.063 x 6.625 Diameter Circle	5005-0	251-0196-03			OB
.063 x 7.000 Coil Stock	5005-H34	251-0077-01			OB
.063 x 7.875 Diameter Circle	5005-0	251-0196-02			OB
.063 x 9.094 Coil Stock	5005-H34	251-0077-02			OB
.063 x 9.500 Coil Stock	5052-H34	251-0180-01	1.213	lb	CS
.080 x .700 Coil Stock	5005-H34/H14	251-0078-05	1.117	lb	CS
.080 x 2.550 Coil Stock	5052-H32	251-1019-04	.114	oz	OT
.080 x 2.625 Coil Stock	5052-H32	251-1019-03	1.821	lb	CR
.080 x 3.188 Coil Stock	5005-H34/H14	251-0078-06	2.350	lb	CR
.080 x 4.250 Coil Stock	5052-H32	251-1019-01	2.000	lb	CR
.080 x 6.000 Coil Stock	5005-H34/H14	251-0078-04	1.757	lb	CS
.080 x 6.250 Coil Stock	5052-H32	251-1019-02			OB
.080 x 8.000 Coil Stock	5005-H34/H14	251-0078-03	1.680	lb	CR
.090 x 3.750 Coil Stock	5052-H32	251-0182-02	.138	oz	CR
.090 x 5.187 Coil Stock	5052-H32	251-0182-03	.142	oz	CR
.090 x 9.750 Coil Stock	5005-H34	251-0070-04	2.250	lb	CS

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SHEET (ASTM B209^a)

Description	Alloy & Temper	Part Number	Codes ^b	
			Cost	ST
.008 x 10 x 12 Adhesive Back, Photo Sensitive	1195	251-1643-00		DL
.009 x 18 x 24 (Lithograph)		251-1642-00	1.550 sh	CR
.016 x 13 x 20 (Hardene D, Drilling Entry Material)		006-6032-00	1.140 sh	PP
.016 x 36 x 108 (Anodized)	3003-H14	251-0145-00	1.480 lb	CR
.016 x 36 x 144	7075-T6	251-1348-00	.035 si	CR
.020 x 36 x 48 (w/.010 Black Vinyl Clad One Side)	3003-H14	251-0225-00	.017 si	CR
.025 x 36 x 96 (3.709 Perforated & 2.781 Blank Section Across Sheet)	3003-H14	251-0053-00	.003 si	CS
.025 x 36 x 108 (Anodized)	3003-H14	251-0028-00	.004 si	CR
.025 x 48 x 144	5005-H34	251-0075-00	.005 si	CR
.025 x 48.06 x 144.06	5052-H32/H34	251-1190-00	.004 si	CR
.025 x 48 x 144	6061-T5	251-1063-00	.013 si	OT
.032 x 16 x 24	5052-H32	251-1641-01		OB
.032 x 17.265 x 120 (w/.010 Blue Vinyl Clad One Side)	5052-H32	251-1157-01	.025 si	CR
.032 x 48 x 144	5052-H32	251-1641-00	.006 si	CR
.040 x 9.5 x 15	5052-H34	251-1789-00	2.150 sh	CR
.040 x 12 x 20		251-1804-00		DL
.040 x 14.610 x 35.223 (Pebble Grain Alloy)	5052-H334	251-1227-05	4.550 ea	CR
.040 x 24 x 48	5052-H0	251-1794-00	.009 si	CR
.040 x 33.572 x 148.500 (M103 Embossed Stucco, Depth of .004)	5052-H354	251-1227-03	.008 si	CR
.040 x 33.572 x 148.500 (#60 Stucco Pattern)	5052-H354	251-1227-04	.006 si	CR
.040 x 34.125 (Fine Pebblegrain, Depth of .003)	5052-H354	251-1227-01		DL
.040 x 36 x 120 (Perforated)	3003-H14	251-1823-00	.108 si	PP
.040 x 44 x 108 (Anodized)	3003-H14	251-0108-00	.010 si	CR
.040 x 48 x 144 (Perforated .250 Square on .312 Centers)	3003-H14	251-0100-00	.026 si	CR
.040 x 48 x 144	5005-H34/H14	251-0076-00	.006 si	CR
.040 x 48 x 144	5052-H34	251-0202-00	.006 si	CR
.050 x 7.020 x 42.28	5052-H32	251-1817-00	3.220 ea	PP
.050 x 10.704 x 20 (Perforated .078 Diameter on .125 Centers)	3003-H14	251-1446-01		DL
.050 x 15.500 x 16	5052-H32	251-1816-00	2.350 ea	CR
.050 x 15.900 x 120 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0220-12		DL
.050 x 15.900 x 120 (w/.010 Vinyl Clad One Side, Coarse Stipple Grain Tek Tan)	5052-H34	251-0271-04		DL
.050 x 19.682 x 146 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0220-11	.007 si	CR
.050 x 20 (Embossed Pigskin, Depth .003)	5005-H134	251-0220-07		DL
.050 x 26 x 127 (Fluted, Rib Height .007)	5005-H134	251-0141-00	.003 si	CS
.050 x 30 x 48 (Vinyl Clad, Earth Brown)	5052-H34	251-0271-10	29.025 sh	CR
.050 x 32.240 (Embossed Pigskin, Depth .003)	5005-H134	251-0220-08		DL
.050 x 36 x 96 (M103 Embossed Stucco, Depth .004)	5005-H-134	251-0220-10	.007 si	CR
.050 x 36 x 96 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0220-13	.009 si	CR
.050 x 36 x 120 (Perforated .188 Diameter on .250 Centers)	3003-H14	251-1692-00	.016 si	CS
.050 x 36 x 120 (Perforated .078 Diameter on .125 Centers)	3003-H14	251-1446-00	2.742 sf	CR
.050 x 36.500 x 130 (Fluted, Rib Height .007)	5005-H134	251-0141-01		DL
.050 x 40 x 152 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0113-19		OB
.050 x 42 x 148 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0113-18		NP
.050 x 44 x 108 (Anodized)	3003-H14	251-0031-00	.008 si	CR
.050 x 48 x 120 (w/.010 Vinyl Clad One Side, Coarse Stipple Grain Tek Blue)	5052-H34	251-0271-03	.023 si	CR
.050 x 48 x 120 (w/.010 Vinyl Clad One Side, Coarse Stipple Grain TV Gray)	5052-H34	251-0271-05	.010 si	CR
.050 x 48 x 144	5005-H34/H14	251-0073-00	.008 si	CR
.050 x 48 x 144	5052-H34	251-0179-00	.008 si	CR
.050 x 48 x 144 (Fluted, Rib Height .007)	5005-H134	251-0141-02		OB
.050 x 48 x 144 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0113-17	.009 si	CR
.060 x 42 x 120 Long (w/.010 Vinyl Clad One Side, Coarse Stipple Grain, Earth Brown)	5052-H32	251-0271-06	.020 si	CR
.063 x 13.250 Coil Stock	5052-H34	251-0180-02	1.262 lb	CS
.063 x 19.130 x 24.750 (Perforated .078 Diameter Holes on .312 Centers)	5052-H32	251-1109-00	5.280 ea	CR
.063 x 38 x 152 (M103 Embossed Stucco, Depth .004)	5005-H134	251-0114-01	.010 si	CR
.063 x 48 x 144	5005-0	251-0196-00	.032 si	CR
.063 x 48 x 144 (PVC Protective Film)	6061-0	251-1771-00	.011 si	CR
.063 x 48 x 144 (Anodized)	3003-H14	251-1301-00	.012 si	CR
.063 x 48 x 144	6061-T6	251-0071-00	.013 si	CR
.063 x 48 x 144	5005-H14	251-0077-00	.010 si	CR
.063 x 48 x 144	5052-H34	251-0180-00	.011 si	CR

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ALUMINUM

SHEET (ASTM B209^a) (cont)

Description	Alloy & Temper	Part Number	Codes ^b	
			Cost	ST
.071 x 48 x 144	2024-T3	251-0066-00	.018 si	CR
.080 x 48 x 144	5005-H34/H14	251-0078-02		DL
.080 x 46 x 142	5005-H34/H14	251-0078-01	.009 si	CR
.080 x 48 x 48 (w/.010 Black Vinyl Clad Haircell Pattern One Side)	3003-H14	251-1337-00		DL
.080 x 48 x 108 (w/10% Metal Cladding)	3003-H14	251-0036-00	.017 si	CR
.080 x 48 x 144	5005-H34/H14	251-0078-00	.013 si	CR
.080 x 48 x 144	5052-H32	251-1019-00	.013 si	CR
.090 x 48 x 144	6061-T6	251-0195-00	.016 si	CR
.090 x 48 x 144	5052-H32	251-0182-00 ^c	.012 si	CR
.090 x 48 x 144	5005-H14	251-0070-00	.014 si	CR
.100 x 48 x 144	5052-H32	251-0034-00 ^c	.016 si	CR
.100 x 48 x 144	6061-T6	251-1858-00	.020 si	CR
.125 x 24 x 48	1100-H14	251-1847-00	.076 si	CR
.125 x 48 x 48 (w/.010 Black Vinyl Clad Haircell Pattern One Side)	5052-H32	251-1102-00		OB
.125 x 48 x 80 (Anodized)	3003-H14	251-0038-00	.015 si	CR
.125 x 48 x 144	2024-T4	251-1621-00	.041 si	CR
.125 x 48 x 144	5052-H32	251-0072-00	.020 si	CR
.125 x 48 x 144	6061-T6	251-1841-00	.020 si	PP
.125 x 54 x 144	5052-H32	251-0072-01	.017 si	CR
.160 x 48 x 144	6061T-6	251-1813-00	.031 si	PP
.190 x 48 x 144	5052-H32	251-1056-00	.028 si	CR
.250 x 22.125 x 28.625	6061-T6	251-1561-00	2.820 lb	CS
.250 x 48 x 144	6061-T6	251-1305-00	.044 si	CR
.250 x 48 x 144	5052-H32	251-0125-00	.045 si	CR
.400 x 48 x 144 (w/PVC One Side)	5052-H32	251-1871-00	.007 si	CR

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^c Safety Controlled.

SQUARE AND RECTANGULAR TUBE (ASTM B221^a)

Description	Alloy & Temper	Part Number	Codes ^b	
			Cost	ST
.624 Square ID x .063 Wall x 181.500 Long	6063-T4	251-0210-00		DL
.880 Square ID x .060 Wall x 102 Long	6063-T4	251-0231-00		DL
1.000 x Square ID x .058 Wall (ASTM B281)	3003	251-1004-00	.485 lb	EN
1.000 x 1.500 x .125 Wall	6063-T5	251-1284-00	.112 in	CR
1.000 x 2.000 Rectangular x .125 Wall x 21 Long	6063-T5	251-0246-00	.109 in	CR
1.000 x 3.000 x .125 Wall	6063-T6	251-1558-00	.201 in	CR
1.030 Square ID x .050 Wall	6063-T6	251-0285-00		OB
1.125 x 3.000 Rectangular x .125 Wall x 80 Feet Long	6063-T6	251-0295-00	.270 in	CR

ROUND TUBE

Description	Alloy & Temper	Specification ASTM ^a	Part Number	Codes ^b	
				Cost	ST
.089 x .010 Wall Thickness	3003-H16	ASTM B210	251-0136-00	2.800 ft	CR
.188 OD x .049 Wall Thickness	6061-T6	ASTM B210	251-0039-00	.061 in	CR
.250 OD x .035 Wall Thickness	6061-T6	ASTM B210	251-0040-00	.021 in	CR
.250 OD x .049 Wall Thickness	6061-T6		251-0093-00	.081 ft	EN
.250 OD x .058 Wall Thickness	6061-T6	ASTM B210	251-0099-00	.017 in	CR
.312 OD x .028 Wall Thickness	6061-T6	ASTM B210	251-1239-00		OB
.312 OD x .058 Wall Thickness	6061-T6	ASTM B210	251-0041-00	.062 in	CR
.375 OD x .125 Wall Thickness -.000 x 12 Feet Long	2024-T3	ASTM B210	251-0096-00	.099 in	CR
.375 OD x .065 Wall Thickness	6061-T6	ASTM B210	251-0042-00	.047 in	CR
.375 OD x .028 Wall Thickness x .319 ID x 12 Feet Long	7075-T6	ASTM B210	251-0155-00	.473 in	CR
.500 OD x .028 Wall Thickness	6061-T6	ASTM B210	251-0043-00		OB
.500 OD x .058 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-0085-00	.052 in	CR
.500 OD x .095 Wall Thickness x 12 Feet Long	2024-T3	ASTM B210	251-1187-00		OB
.625 OD x .035 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-0089-00		OB
.625 OD x .058 Wall Thickness	6061-T6	ASTM B210	251-0044-00	.062 in	CR
.625 OD x .028 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-0153-00	26.010 lb	CR
.750 OD x .035 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-0233-00	.581 ft	CR
1.125 OD x .250 Wall Thickness	6061-T6	ASTM B221	251-1311-00	7.080 ft	CR
1.250 OD x .049 Wall Thickness x 12 Feet Long	6061-T6	ASTM B221	251-1358-00	2.650 ft	CR
1.375 OD x .058 Wall Thickness	6061-T6	ASTM B210	251-1400-00		OB
1.500 OD x .049 Wall Thickness	6061-T6	ASTM B210	251-0112-00		OB
1.500 OD x .065 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-0167-00	4.740 lb	CR
1.500 OD x .125 Wall Thickness x 12 Feet, 6 Inches Long	6061-T6	ASTM B210	251-1381-00	2.871 lb	CR
1.900 OD x .145 Wall Thickness x 20 Feet Long	6061-T6	ASTM B221	251-1356-00	3.170 ft	CR
2.250 OD x .065 Wall Thickness x 12 Feet Long	6061-T6	ASTM B221	251-1357-00	3.390 ft	CR
2.250 OD x .312 Wall Thickness	6061-T6	ASTM B210	251-1286-00		OB
3.000 OD x .065 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-0131-00		OB
3.000 OD x .250 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-1542-00	5.840 ft	CS
3.000 OD x .750 Wall Thickness x 12 Feet Long	6061-T6	ASTM B210	251-1543-00	12.250 ft	CS
3.765 OD x .150 Wall Thickness x 12 Feet Long	6061-T6	ASTM B221	251-1251-00		DL

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ALUMINUM**ALUMINUM WIRE CLOTH**

Description	Part Number	Codes ^a		
		Cost	ST	
.020 Dia Wire, .097 Inch Openings, 36 Inches Wide	251-0235-00	.108 in	CS	
.011 Dia Wire (16 x 18 Inch Mesh), 36 Inches Wide	251-1772-00	.002 si	CR	
.032 Dia Wire, .1875 Inch Openings, 36 Inches Wide	251-0154-00	.010 si	CR	

ALUMINUM SILICON CASTING ALLOY (ASTM B179^b)

Description	Part Number	Codes ^a	
		Cost	ST
Bulk, Alloy, A356	251-1026-00		DL
Bulk, Alloy, A380	251-1036-00		DL

ALUMINUM ALLOY INGOT (ASTM B179^b)

Description	Part Number	Codes ^a	
		Cost	ST
Alloy - SCV114A (Except 2% - 3% Zinc)	251-1080-00		DL

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^b The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

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INDUSTRY STANDARDS REFERENCE

ASTM B16	"Free Cutting Brass Rod, Bar, and Shapes for use in Screw Machines" - Applies to alloy UNS 36000 only (lead brass). Contains specifications for chemical composition, hardness, and mechanical properties of various tempers. Does not specify dimensional tolerances.
ASTM B36	"Brass Plate, Sheet, Strip, and Rolled Bar." - Contains specifications for chemical composition, hardness, mechanical properties, and grain size for various alloys and tempers of wrought brass products (except leaded alloys). Does not specify dimensional tolerances.
ASTM B121	"Leaded Brass Plate, Sheet, Strip, and Rolled Bar" - Contains same information as ASTM B36, but is applicable to leaded alloys only.
ASTM B134	"Brass Wire" - Contains same information as ASTM B36, but is for round, hexagonal, octagonal, and flat drawn wire products only.
ASTM B135	"Seamless Brass Tube." - Contains specifications for chemical composition, hardness, mechanical properties, and formability requirements for seamless round and rectangular tubing.
ASTM B248	"General Requirements for Wrought Copper and Copper Alloy Plate, Sheet, Strip, and Rolled Bar." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B36, B103, B121, B122, B152, B169, B194, B291, B422, B465, B534, B591, and B592.
ASTM B249	"General Requirements for Wrought Copper and Copper Alloy Rod, Bar, and Shapes." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, B453, and B455.
ASTM B250	"General Requirements for Wrought Copper Alloy Wire." - Contains dimensional tolerance requirements for round and rectangular wire ordered under these specifications: ASTM B16, B99, B134, B159, B197, B206, and B412.
ASTM B251	"General Requirements for Wrought Seamless Copper and Copper Alloy Tube." - Contains dimensional tolerance requirements for round and rectangular seamless tubing ordered under these specifications: ASTM B68, B75, B135, and B466.
ASTM B453	"Copper - Zinc - Lead Alloy Rod" - Contains specifications for chemical composition, hardness, and mechanical properties for various alloys and tempers of leaded brass rod other than alloy UNS 36000. Does not specify dimensional tolerances.
ASTM B601	"Standard Practice for Temper Designations for Copper & Copper Alloys." - Contains proper methods to designate the various annealed, cold worked, or heat treated tempers of copper based materials.

CATALOG WRITER: CAROLE JACK, 629-3029

WIRE

Size	Alloy ^a	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.008 x 1.060 x 12 Foot Coil Stock	C26000	H02	B36	B248	251-0342-01		OB	
.010 x .625 Coil Stock	C26000	H02	B36	B248	258-0307-00	2.890 lb	CR	
.0126 x .875 Coil Stock	C26000	H02	B36	B248	258-0366-00	1.444 lb	CR	
.015 x .080 x 12 Feet Long	C26000	H02	B36	B248	258-0487-00		DL	
.016 x .700 Coil Stock	C26000	H02	B36	B248	251-0315-04	5.110 lb	CR	
.016 x .750 Coil Stock	C26000	H02	B36	B248	251-0315-05		DL	
.016 x 1.000 Coil Stock	C26000	H02	B36	B248	251-0315-06	1.540 lb	CS	
.020 x .187 Coil Stock	C26000	H02	B36	B248	251-0316-05	2.850 lb	CS	
.020 x .874 Coil Stock	C26000	H02	B36	B248	251-0316-03	4.610 lb	CR	
.020 x 1.000 Coil Stock	C26000	H02	B36	B248	251-0316-04	.095 oz	CR	
.0245 x 12 Feet Long	C26000	H02	B36	B248	251-0430-00		OB	
.025 Square	C26000	H02	B134	B250	258-0455-00	9.450 lb	CR	
.025 x .219 x 12 Feet Long	C26000	H02	B36	B248	258-0337-00		OB	
.032 Diameter x 12 Feet Long	C26000	H02	B134	B250	258-0318-00	.003 in	CR	Tinned Finish
.032 x .687 Coil Stock	C26000	H02	B36	B248	251-0333-01	3.000 lb	CR	
.032 x .687 Coil Stock	C26000	H02	B36	B248	251-0333-02	1.706 lb	CR	
.032 x 1.125 Coil Stock	C26000	H02	B36	B248	251-0333-08	1.432 lb	CR	
.040 x .144 Coil Stock	C26000	H02	B36	B248	251-0317-01	6.200 lb	CS	
.0403 Diameter Coil Stock	C26000	H02	B134	B250	258-0342-00		DL	
.045 Square w/.005 Corner Radii .0575 Minimum Corner To Corner Coil Stock	C26000	H02	B134	B250	251-0445-00	.263 oz	CS	
.051 Diameter Coil Stock	C26000	H08	B134	B250	258-0430-00	.003 in	CR	
.062 Diameter Coil Stock	C26000	H01	B134	B250	251-0494-00	1.376 oz	CR	
.0625 Diameter	C36000	H02	B16	B249, B250	251-0391-00	.006 in	CR	
.064 x .250 Coil Stock	C26000	H02	B36	B248	258-0359-00		OB	
.072 Diameter x 6 Feet Long	C36000	H04	B16	B249, B250	258-0499-00	2.840 lb	CR	
.072 Diameter x 12 Feet Long	C26000	H08	B134	B250	251-0350-00		OB	
.094 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	258-0443-00	4.032	CR	
.094 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0399-00	.005 in	CR	
.125 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0306-00	.008 in	CR	
.125 Hex x 12 Feet Long	C36000	H02	B16	B249	258-0356-00	.015 in	CR	
.156 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0307-00	.014 in	CR	
.156 Hex x 12 Feet Long	C36000	H02	B16	B249	251-0382-00	.053 in	CR	
.156 Diameter x 12 Feet Long	C34200	H02	B121	B250	251-0453-00	.008 in	CR	
.188 Diameter x 12 Feet Long	C34200	H02	B121	B121, B250	251-0308-00	.015 in	CR	
.188 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0301-00	.017 in	CR	
.219 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0343-00	.028 in	CR	
.219 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	258-0432-00	.022 in	CR	
.219 Diameter x 12 Feet Long	C34200	H02	B121	B248	251-0454-00	.022 in	CR	
.2438 Diameter x 5 or 6 Feet Long	C36000	H02	B16	B249, B250	251-0485-00	.120 in	CR	
.250 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0309-00	.019 in	CR	
.250 Square x 12 Feet Long	C36000	H02	B16	B249, B250	258-0482-00	.051 in	CR	
.250 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0345-00	.022 in	CR	
.250 Diameter x 12 Feet Long	C34200	H01	B121	B248	258-0377-00	.025 in	CR	
.281 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0331-00	.032 in	CR	
.281 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0380-00	.058 in	CR	
.281 Diameter x 12 Feet Long	C34200	H01	B121	B248	258-0365-00	.027 in	CR	
.281 Square x 12 Feet Long	C35300	H02	B121	B248	258-0322-00	.048 in	CR	
.312 Hex x 12 Feet Long	C36000	H02	B16	B248, B250	251-0373-00	.035 in	CR	
.312 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0328-00	.032 in	CR	
.312 Square x 12 Feet Long	C36000	H02	B16	B249, B250	258-0360-00	.046 in	CR	
.344 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	258-0358-00	.066 in	CR	
.344 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0446-00	.047 in	CR	
.373 Dia x 12 Feet Long	C36000	H02	B16		258-0546-00	.064 in	CR	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

BAR

Size	Alloy ^a	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.125 x .375 x 12 Feet Long	C36000	H02	B16	B249, B250	251-0314-00	.044 in	CR	
.187 x .500 Coil Stock	C36000	H02	B16	B249, B250	251-3054-00	.103 in	CR	
.250 x .500 x 12 Feet Long	C36000	H02	B16	B249, B250	258-0344-00	.166 in	CR	
.250 x 1.750 x 12 Feet Long	C36000	H02	B16	B249, B250	258-0376-00	.451 in	CR	
.250 x 7.000 x 9.177 Long	C36500		B171-80		258-0312-00	37.800 ea	CR	
.312 x .875 x 12 Feet Long	C36000	H02	B16	B249, B250	258-0379-00	.485 in	CR	
.375 Diameter x 12 Feet Long	C34200	H01	B121	B248	251-0457-00	.037 in	CR	
.375 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0310-00	.042 in	CR	
.375 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0476-00	.053 in	CR	
.375 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0302-00	.058 in	CR	
.375 x .750 x 12 Feet Long	C36000	H02	B16	B249, B250	258-0407-00	.203 in	CR	
.438 Diameter x 12 Feet Long	C34200	H02	B121	B249, B250	251-0339-00	.065 in	CR	
.438 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0303-00	.069 in	CR	
.500 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0311-00	.081 in	CR	
.500 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0304-00	.087 in	CR	
.500 x .625 x 12 Feet Long	C36000	H02	B16	B249, B250	258-0398-00	.185 in	CR	
.500 x 3.000 x 12 Feet Long	C33000	H02	B16	B249, B250	258-0428-00	.927 in	CR	
.562 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0433-00	.112 in	CR	
.562 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0305-00	.134 in	CR	
.624 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0312-00	.086 in	CR	
.625 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	251-0441-00		OB	
.688 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0403-00	.122 in	CR	
.719 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0414-00	.191 in	CR	
.750 Diameter x 12 Feet Long	C34200	H02	B121	B249, B250	251-0495-00	.149 in	CR	
.750 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0313-00	.225 in	CR	
.750 Hex x 12 Feet Long	C36000	H02	B16	B249, B250	258-0306-00	.140 in	CR	
.812 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0426-00		OB	
.875 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0482-00	1.219 lb	CR	
1.000 x 1.500 x 12 Feet Long	C36000	H02	B16	B249, B250	258-0409-00	1.471 in	CR	
1.000 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	258-0500-00	.355 in	CR	
1.062 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0394-00	.433 in	CR	
1.250 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0491-00	.596 in	CS	
1.375 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	258-0301-00	.386 in	CR	
1.625 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	251-0486-00	1.020 in	CR	
2.000 Diameter x 12 Feet Long	C36000	H02	B16	B249, B250	258-0303-00		OB	

FOIL

Size	Alloy ^a	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.003 x 6.000 Inch Wide Coil Stock	C26000	H02	B36	B248	251-0499-00	.191 oz	CR	
.004 x 6.000 Inch Wide Coil Stock	C26000	H02	B36	B248	251-0496-00	.166 oz	CS	

ROD

Size	Alloy ^a	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.438 x 12.000 Feet	C36000	H02	B16		258-0552-00	in	CR	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

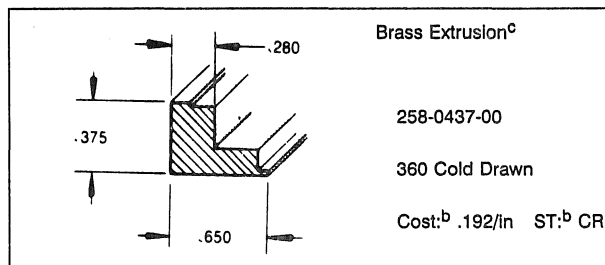
^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

STRIP

Size	Alloy ^a	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.006 x 6.000 Coil Stock x 100 Inches Long	C26000	H02	B36	B248	251-0440-00	.188 oz	CR	
.008 x 1.400 Coil Stock	C26000	H02	B36	B248	251-0342-02		OB	
.008 x 12.000 Coil Stock	C26000	H02	B36	B248	258-0520-00	.239 oz	CR	
.010 x 1.500 Coil Stock	C26000	H02	B36	B248	258-0307-03	2.870 lb	CR	
.010 x 1.625 Coil Stock	C26000	H02	B36	B248	258-0307-05	7.340 lb	CR	
.010 x 2.000 Coil Stock	C26000	H02	B36	B248	258-0307-06		OB	
.010 x 2.250 Coil Stock	C26000	H02	B36	B248	258-0307-04	6.230 lb	CR	
.010 x 3.000 Coil Stock	C26000	H02	B36	B248	258-0307-07	.106 oz	CR	
.010 x 4.250 Coil Stock	C26000	H02	B36	B248	258-0307-01		OB	
.010 x 6.000 Coil Stock	C26000	H02	B36	B248	258-0307-02	.164 oz	CR	
.010 x 7.290 Coil Stock	C26000	H02	B36	B248	251-0315-09	.023 oz	CR	
.010 x 12.000 x 22 Inches Long	C26000	H02	B36	B248	258-0536-00	4.443 lb	CR	
.016 x 1.250 Coil Stock	C26000	H02	B36	B248	251-0315-01	1.920 lb	OT	
.016 x 1.625 Coil Stock	C26000	H02	B36	B248	251-0315-03	1.520 lb	CR	
.016 x 3.250 Coil Stock	C26000	H02	B36	B248	251-0315-02	2.650 lb	CR	
.016 x 3.500 Coil Stock	C26000	H02	B36	B248	251-0315-07	.109 lb	CR	
.016 x 12.000 x 22 Inches Long	C26000	H02	B36	B248	251-0315-08	.011 si	CR	
.020 x 1.500 Coil Stock	C26000	H02	B36	B248	251-0316-01	3.990 lb	CR	
.020 x 1.670 Coil Stock	C26000	H02	B36	B248	258-0509-00	2.830 lb	CR	
.020 x 3.000 Coil Stock	C26000	O60	B36	B248	251-0489-00		OB	
.020 x 4.000 Coil Stock	C26000	H02	B36	B248	251-0316-02		OB	
.020 x 12.000 x 22 Inches Long	C26000	H02	B36	B248	251-0316-06	.012 si	CR	
.025 x 2.750 Coil Stock	C26000	H02	B36	B248	258-0337-04	1.263 lb	CR	
.032 x 1.750 Coil Stock	C26000	H02	B36	B248	251-0333-03	.175 oz	CR	
.032 x 2.000 Coil Stock	C26000	H02	B36	B248	251-0333-06	1.308 lb	CR	
.032 x 2.250 Coil Stock	C26000	H02	B36	B248	251-0333-10	2.300 lb	CR	
.032 x 2.500 Coil Stock	C26000	H02	B36	B248	258-0519-00	2.680 lb	CR	
.032 x 6.000 x 96 Inches Long	C26000	H02	B36	B248	251-0333-07	1.264 lb	CS	
.032 x 7.250 Coil Stock	C26000	H02	B36	B248	251-0333-09	1.710 lb	CR	
.032 x 12.000 x 96 Inches Long	C26000	H04	B36	B248	258-0445-00	2.250 lb	CR	
.040 x 7.250 Coil Stock	C26000	H02	B36	B248	251-0317-02	.106 oz	CS	

SHEET

Size	Alloy	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^b	Part Number	Codes ^c		Other
						Cost	ST	
.016 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0315-00	2.310 lb	CR	
.020 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0316-00	2.160 lb	CR	
.025 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	258-0337-03	1.870 lb	CR	
.032 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0333-00	1.850 lb	CR	
.040 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0317-00	1.750 lb	CR	
.025 x 12.000 x 22 Inches Long	C26000	H02	B36	B248	258-0337-05	.013 si	CR	
.051 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0318-00	1.960 lb	CR	
.064 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0363-00	.042 si	CR	
.090 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	251-0413-00	.055 si	CR	
.125 x 24.000 x 96 Inches Long	C26000	H02	B36	B248	258-0408-00	.078 si	CR	



^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^c Prior to ordering any extrusion, or using Heat Sinks requiring extrusions, contact the appropriate division Purchasing Department to verify the availability of the part from vendors. If there is no tooling, the cost and availability of the extrusion will change.

TUBE

Size	Alloy ^a	Temper ^a Designations	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.0625 OD x .042 ID x 12 Ft Long	C26000	H80	B135	B251	251-0393-00	.015 in	CR	
.065 OD x .030 ID x 12 Ft Long	C26000	O50	B135	B251	251-0479-00	.142 in	CR	
.094 OD x .073 ID x 12 Ft Long	C26000	H58	B135	B251	258-0426-00	.311 in	CR	
.125 OD x .010 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0423-00	.012 in	CR	
.125 OD x .025 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0351-00	.030 in	CR	
.155 OD x .086 ID x 12 Ft Long	C26000	H80	B135	B251	258-0489-00	.522 in	CR	
.156 OD x .132 ID x 12 Ft Long	C26000	H80	B135	B251	258-0317-00	.074 in	CR	
.1875 OD x .130 ID x 12 Ft Long	C26000	H80	B135	B251	251-0437-00	.033 in	CR	
.189 OD x .157 ID x 12 Ft Long	C26000	H80	B135	B251	258-0309-00	.236 in	CR	
.248 OD x .188 ID	C26000	H80	B135	B251	258-0505-00	.149 in	CR	
.248 OD x .132 ID x 12 Ft Long	C26000	H80	B135	B251	251-0389-00	.071 in	CR	
.248 OD x .148 x .003 ID x 12 Ft Long	C26000	H80	B135	B251	251-0492-00	.102 in	CR	
.250 OD x .035 Wall x 12 Ft Long	C33000	H80	B135	B251	251-0319-00	.085 in	CR	
.250 OD x .065 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0368-00	.082 in	CR	
.281 OD x .204 ID x 12 Ft Long	C26000	H58	B135	B251	258-0521-00	.091 in	CR	
.281 OD x .157 ID x 12 Ft Long	C33200	H80	B135	B251	258-0412-00	.057 in	CR	
.312 OD x .049 Wall x 12 Ft Long	C33000	H80	B135	B251	258-0413-00	1.240 ft	CR	
.319 ID x .018 Wall x 8 to 12 Ft Long	C33000	H80	B135	B251	258-0380-00	.044 in	CR	
.319 ID x .028 Wall x 12 Ft Long	C33000	H80	B135	B251	251-0402-00		OB	
.344 OD x .312 ID x 7 to 14 Ft Long	C26000	H58	B135	B251	258-0321-00		OB	
.375 OD x .028 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0424-00		DL	
.0375 OD x .250 ID x 12 Ft Long	C26000	H80	B135	B251	251-0358-00	.290 in	CR	
.438 OD x .065 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0332-00		OB	
.500 OD x .032 Wall x 12 Ft Long	C33000	H80	B135	B251	258-0389-00		OB	
.561 OD x .500 ID x 12 Ft Long	C26000	H80	B135	B251	251-0459-00		OB	
.562 Diameter x .065 Wall x 12 Ft Long	C26000	H80	B135	B251	258-0387-00	.235 in	CR	
.624 OD x .065 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0404-00	4.540 lb	CR	Plating Quality Finish
.624 OD x .562 ID x 12 Ft Long	C26000	H80	B135	B251	251-0484-00	.066 in	CR	
.625 OD x .566 x .005 - .000 ID x 12 Ft Long	C26000	H80	B135	B251	251-0428-00		OB	
.625 OD x .375 ID	C33000	H80	B135	B251	258-0511-00	.547 in	CR	
.688 x .028 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0337-00		OB	
.750 OD x .028 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0321-00	1.350 lb	CS	
.750 OD x .125 Wall x 12 Ft Long	C33000	H80	B135	B251	251-0323-00	.065 in	CS	
.875 OD x .028 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0427-00		OB	
.875 OD x .750 ID x 12 Ft Long	C33000	H80	B135	B251	251-0480-00		OB	
1.500 OD x .125 Wall x 12 Ft Long	C26000	H80	B135	B251	258-0305-00		OB	
2.000 OD x .083 Wall x 12 Ft Long	C26000	H80	B135	B251	251-0435-00		OB	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

GEAR STOCK

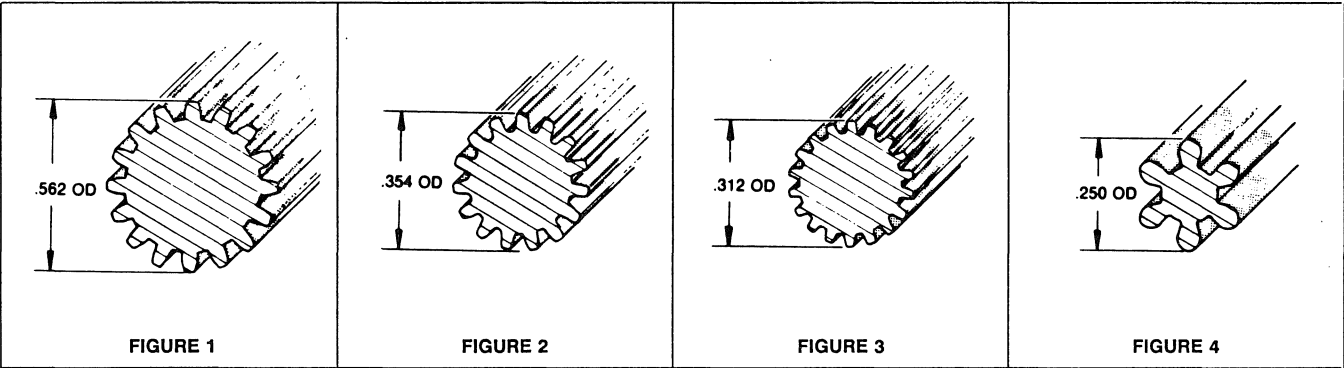


Figure	Diametral Pitch	Teeth	Pitch Dia	Part Number	Codes ^a	
					Cost	ST
1	32	16	.500	258-0523-00	.770 in	OT
2	48	16	.312	251-0823-00	.721 in	CR
3	64	18	.281	258-0431-00	12.890 ft	CR
4	32	6	.1875	251-0405-00		OB

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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TEK STANDARDS PERTAINING TO MATERIALS

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062-3616-00	Basic Environmental Test Limits for Materials and Components
062-5818-00	General Information about Bulk Raw Materials

INDUSTRY STANDARDS REFERENCE

ASTM B194	Copper Beryllium Alloy Plate, Sheet, Strip, & Rolled Bar - Contains chemical composition limits and requirements for mechanical properties, grain size, bend test, and precipitation heat treating for Alloy UNS 17000 & 17200. Does not specify dimensional tolerances.
ASTM B196	Copper Beryllium Alloy Rod & Bar - Contains requirements for chemical composition, mechanical properties, and precipitation heat treating for Alloys UNS 17000, 17200 & 17300 of these product types when shipped in straight lengths. Does not specify dimensional tolerances.
ASTM B197	Copper Beryllium Alloy Wire - Contains requirements for chemical composition, mechanical properties, grain size, bend test, and precipitation heat treating for Alloys UNS 17200 & 17300 when shipped in coils or spools, but not straight lengths. Does not specify dimensional tolerances.
ASTM B248	"General Requirements for Wrought Copper and Copper Alloy Plate, Sheet, Strip, and Rolled Bar." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B36, B103, B121, B122, B152, B169, B194, B291, B422, B465, B534, B591, and B592.
ASTM B249	"General Requirements for Wrought Copper and Copper Alloy Rod, Bar, and Shapes." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, B453, and B455.
ASTM B250	"General Requirements for Wrought Copper Alloy Wire." - Contains dimensional tolerance requirements for round and rectangular wire ordered under these specifications: ASTM B16, B99, B134, B159, B197, B206, and B412.
ASTM B601	"Standard Practice for Temper Designations for Copper & Copper Alloys." - Contains proper methods to designate the various annealed, cold worked, or heat treated tempers of copper based materials.

CATALOG WRITER: SANDRA PHILLIPS, 629-3030

WIRE

Size	Alloy ^a	Temper ^a	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.006 x .125 Coil	C17200	TD04	B194	B248	258-0381-01	2.210 oz	CR	Silver Clad
.006 x .156 Coil	C17200	TD04	B194	B248	258-0381-00	.644 oz	CR	
.006 x 1.000	C17200	TB00	B194	B248	251-0401-00	.618 oz	CR	
.007 x .187 Coil	C17200	TD01	B194	B248	251-0465-01	.015 in	CR	
.007 x .500	C17200	TD01	B194	B248	251-0465-03	1.522 oz	CR	
.007 x .531	C17200	TD02	B194	B248	258-0374-02	11.109 lb	CR	
.007 x .640	C17200	TD01	B194	B248	251-0465-02	2.147 oz	CR	
.008 x .125	C17200	TD04	B194	B248	258-0382-01	1.061 oz	CR	
.008 x .156	C17200	TD04	B194	B248	258-0382-00	.626 oz	CR	
.010 x .125	C17200	TD04	B194	B248	258-0383-01	.924 oz	CR	
.010 x 1.093	C17200	TD04	B194	B248	258-0383-03	10.680 lb	CS	
.010 x .156	C17200	TD04	B194	B248	258-0383-00	.989 oz	CR	
.010 x .844	C17200	TD01	B194	B248	251-0462-05	.680 oz	CR	
.010 x 1.000	C17200	TD01	B194	B248	251-0462-02	2.052 oz	CR	
.0126 x .500	C17200	TD01	B194	B248	251-0378-03		OB	
.0126 x 1.125	C17200	TD01	B194	B248	251-0378-02	17.860 lb	CR	
.015 x .312	C17200	TD01	B194	B248	251-0439-01	11.150 lb	CR	
.018 x .200	C17200	TD01	B194	B248	258-0378-02	2.854 oz	CR	
.018 x .250	C17200	TD01	B194	B248	258-0378-00	5.840 lb	EN	
.020 x .312	C17200	TD01	B194	B248	251-0412-01	8.140 lb	CS	
.020 x .625	C17200	TD01	B194	B248	251-0412-00	22.100 lb	CR	
.020 x 1.000	C17200	TD01	B194	B248	251-0412-02	11.340 lb	CR	
.025 x .438	C17200	TD02	B194	B248	251-0400-00	17.860 lb	CR	
.025 x .730	C17200	TD02	B194	B248	251-0400-01	11.530 lb	CR	
.032 x .375	C17200	TB00	B194	B248	251-0406-00	5.830 lb	CR	
.040 Diameter	C17200	TD01	B197	B250	251-0432-00	.938 oz	CR	
.058 x .185	C17200	TD02	B194	B248	258-0423-00	13.940 lb	CR	
.062 Diameter	C17300 ^c	TD02	B196	B250	258-0442-00	.015 in	CR	
.078 Diameter x .500	C17300 ^c	TD04	B196	B196-80	258-0004-00		OB	
.09375 x 12 Feet Long	C17300 ^c	TD02	B196	B249	251-0493-00	.031 in	CR	
.156 Diameter x 12 Feet Long	C17300 ^c	TD02	B196	B249	251-0471-00	.111 in	CR	
.188 Diameter x 12 Feet Long	C17300 ^c	TD02	B196	B249	258-0352-00	.133 in	CR	
.250 Diameter x 12 Feet Long	C17300 ^c	TD02	B196	B249	251-0478-00	.199 in	CR	
.250 Hex x 12 Feet Long	C17300 ^c	TD02	B196	B249	258-0403-00	18.350 lb	CR	
.312 Diameter x 12 Feet Long	C17300 ^c	TD02	B196	B249	258-0420-00	15.440 lb	CR	

BAR

Size	Alloy ^a	Temper ^a	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.375 Diameter x 12 Feet Long	C17300 ^c	TD02	B196	B249	251-0498-00		OB	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^c Beryllium copper 33/34-25 or M25 is the same as C17300.

FOIL

Size	Alloy ^a	Temper ^a	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.002 x 2.250	C17200	TD01	B194	B248	258-0485-00		DL	Cadmium Plate
.002 x 2.500	C17200	TD01	B194	B248	258-0485-03	23.780 lb	CR	
.002 x 4.125	C17200	TD01	B194	B248	258-0485-02	19.460 lb	CR	
.002 x 6.000	C17200	TD02	B196	B248	258-0471-00	21.820 lb	CR	
.002 x 7.000	C17200	TD01	B194		258-0485-04	.015 si	CR	
.003 x 6.000	C17200	TD02	B194	B248	258-0384-01	17.620 lb	CR	
.003 x 6.000	C17200	TD01	B194	B248	258-0507-00	9.150 lb	CR	
.003 x 6.000	C17200	TD04	B194	B248	251-0487-00	.984 oz	CR	
.004 x .125	C17200	TD01	B194	B248	251-0468-00		OB	
.004 x .200	C17200	TD01	B194	B248	251-0468-03	16.780 lb	CS	
.004 x .438	C17200	TD01	B194	B248	251-0468-02		OB	
.004 x .648	C17200	TB00	B194	B248	258-0414-01	12.520 lb	CR	
.004 x 1.000	C17200	TB00	B194	B248	258-0414-00		OB	
.004 x 6.000	C17200	TD04	B194	B248	258-0463-00	18.760 lb	CR	
.004 x 6.000	C17200	TD01	B194	B248	251-0468-01	.909 oz	CR	
.004 x 6.750	C17200	Extra TD04	B194	B248	258-0416-01	11.870 lb	CR	
.005 x .150	C17200	TD01	B194	B248	251-0451-06		DL	
.005 x 1.000	C17200	TD02	B194	B248	251-0490-03	.192 ft	PP	
.005 x .500	C17200	TD01	B194	B248	251-0451-01	1.797 oz	CR	
.005 x 1.062	C17200	TD01	B194	B248	251-0451-02		OB	
.005 x 2.000	C17200	TD01	B194	B248	251-0451-03		OB	
.005 x 6.000	C17200	TD01	B194	B248	251-0451-00	.769 oz	CR	
.005 x 6.000	C17200	TD02	B194	B248	251-0490-00	1.994 ft	CR	
.005 x 6.000	C17200	TD04	B194	B248	258-0510-00	14.630 lb	CR	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

STRIP

Size	Alloy ^a	Temper ^a	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.006 x 6.000	C17200	TD04	B194	B248	258-0464-00	15.230 lb	CR	
.006 x 6.000	C17200	TB00	B194	B248	251-0401-01	.903 oz	CR	
.007 x 1.328	C17200	TD01	B194	B248	251-0465-05		DL	
.007 x 1.500	C17200	TD01	B194		251-0465-06	1.936 oz	CR	
.007 x 6.000	C17200	TD02	B194	B248	258-0374-03	11.940 lb	CR	
.007 x 6.000 to 6.500	C17200	TD01	B194	B248	251-0465-00	.706 oz	CR	
.007 x 6.000	C17200	TD04	B194	B248	258-0396-01	.791 oz	CR	
.008 x 6.000	C17200	TD04	B194	B248	258-0382-02	12.270 lb	CR	
.010 x 1.375	C17200	TD01	B194	B248	251-0462-03	.901 oz	CR	
.010 x 1.812	C17200	TD01	B194	B248	251-0462-01	.883 oz	CR	
.010 x 6.000	C17200	TD01	B194	B248	251-0462-00	.764 oz	CR	
.010 x 6.000	C17200	TD04	B194	B248	258-0383-02	.498 oz	CR	
.010 x 12.000 x 22	C17200	TD04	B194	B248	258-0540-00		DL	
.010 x 12.000 x 22	C17200	TD01	B194	B248	258-0539-00	.036 si	CR	
.0126 x 1.500	C17200	TD01	B194	B248	251-0378-01	19.480 lb	CR	
.0126 x 8.000	C17200	TD02	B194	B248	251-0378-07	1.219 oz	CS	
.0126 x 12.000 x 22	C17200	TD01	B194	B248	251-0378-08	.043 si	CR	
.015 x 2.530	C17200	TD01	B194	B248	251-0439-02	11.150 lb	CR	
.015 x 6.000	C17200	TD01	B194	B248	251-0439-00	.726 oz	CR	
.015 x 6.000	C17200	TD02	B194	B248	258-0421-01	.690 oz	CR	
.015 x 6.000 x 22	C17200	TD01	B194	B194 & 248	251-0439-03	.046 si	CR	
.015 x 12.000 x 22	C17200	TD02	B194	B248	258-0421-03	.079 si	CS	
.018 x 6.000	C17200	TD01	B194	B248	258-0378-01	.736 oz	CR	
.020 x 1.844	C17200	TD01	B194	B248	251-0412-06	17.080 lb	CR	
.020 x 2.750	C17200	TD01	B194	B248	251-0412-03	13.370 lb	CS	
.020 x 6.000 x 22	C17200	TD01	B194	B248	251-0378-00		OB	
.020 x 6.000	C17200	TB00	B194	B248	258-0525-00	1.359 oz	CR	
.020 x 6.000	C17200	TD01	B194	B248	251-0412-04	.718 oz	CR	
.025 x 1.250	C17200	TD01	B194	B248	251-0442-02	19.000 lb	OT	
.025 x 1.625	C17200	TD01	B194	B248	251-0442-01	18.870 lb	CR	
.025 x 2.500	C17200	TD01	B194	B248	258-0468-00	7.840 lb	CS	
.025 x 6.000	C17200	TD01	B194	B248	251-0442-00	.717 oz	CR	
.025 x 12.000 x 22	C17200	TD01	B194	B248	258-0538-00		DL	
.032 x 6.000 to 6.500	C17200	TD01	B194	B248	258-0325-00	.644 oz	CR	

TUBE

Size	Alloy ^a	Temper ^a	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.136 OD x .075 ID	C17200	Seamless	B196		258-0549-00	.181 in	CR	
.140 OD x .080 ID	C17300 ^c	TD02, Seamless	B643		258-0529-00	2.760 ft	CR	

COPPER-BERYLLIUM, BERYLLIUM-NICKEL ALLOY GUIDE

A guide for the selection and use of beryllium-copper and beryllium-nickel alloys is available from the Metallurgical Lab. These two alloys are among the most widely used at Tek for producing springs, contact switches, retainer clips and other similar components.

The guidelines were written by Kwaku Mensah, and describe the electrical and mechanical properties of the alloys, as well as the advantages and disadvantages associated with each. Selection factors are based on electrical and thermal conductivity, yield strength, corrosion and wear resistance, fatigue and impact strength and other criteria.

To make the best choice of materials, it is important that designers be aware of the unique properties of these alloys. If you would like a copy of the selection guidelines, send your request to the Metallurgical Lab (38-314).

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^c Beryllium copper 33/34-25 or M25 is the same as C17300.

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INDUSTRY STANDARDS REFERENCE

ASTM B103	"Phosphor Bronze Plate, Sheet, Strip and Rolled Bar" - Contains specifications for chemical composition, grain size, mechanical properties and hardness for various mill tempers in these product types; does not specify dimensional tolerances.
ASTM B139	"Phosphor Bronze Rod, Bar and Shapes" - Contains specifications for chemical composition and mechanical properties for three mill tempers in these product types. Does not specify dimensional tolerances.
ASTM B159	"Phosphor Bronze Wire" - Contains specifications for chemical composition, mechanical properties, and bent test limits for wire less than 1/2 inch diameter in various mill tempers. Does not specify dimensional tolerances.
ASTM B248	"General Requirements for Wrought Copper and Copper Alloy Plate, Sheet, Strip, and Rolled Bar." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B36, B103, B121, B122, B152, B169, B194, B291, B422, B465, B534, B591, and B592.
ASTM B249	"General Requirements for Wrought Copper and Copper Alloy Rod, Bar, and Shapes." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, B453, and B455.
ASTM B250	"General Requirements for Wrought Copper Alloy Wire." - Contains dimensional tolerance requirements for round and rectangular wire ordered under these specifications: ASTM B16, B99, B134, B159, B197, B206, and B412.

CATALOG WRITER: SANDRA PHILLIPS, 629-3030

WIRE & ROD

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.0201 Diameter	C51000	H08	Spring	B159	B250	251-0383-00	11.436 to	CS	.0001 14K Gold Clad
.062 Diameter	C51000	H08	Spring	B159	B248	251-0325-00		OB	
.0995 Diameter	C51000	H08	Spring	B139		258-0402-01	38.000 lb	CR	
.125 Diameter	C51000	H08	Spring	B139	B249	258-0402-00	5.570 lb	CR	
.250 Diameter	C51000	H08	Spring	B103	B248	258-0470-00	.056 in	CR	

FOIL

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.003 x .219	C52100	H02	One-half Hard	B103	B248	251-0385-00		OB	+ .001 Silver Plated, One Side
.003 x 4.000	C51000	H08	Spring	B103	B248	251-0472-00	.363 oz	CR	
.005 x .500	C52100	H02	One-half Hard	B103	B248	251-0367-00	6.562 oz	CR	+ .002 Silver Plated, One Side

STRIP

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.005 x 1.125	C51000	H08	Spring	B103	B248	251-0366-00	.403 oz	OB	.002 Silver One Side
.0063 x .094		H08	Spring	B103	B248	251-0335-01		CR	
.0063 x 1.510		H08	Spring	B103	B248	251-0335-04	.239 oz	OB	
.0063 x 6.000		H08	Spring	B103	B248	251-0335-00		CR	
.0066 x .125 x 8.000 ID Coil		H08	Spring	B103	B248	251-0397-00		DL	
.010 x .250	C51000	H08	Spring	B103	B248	251-0448-01	1.848 lb	OB	.00015 to .0002 14K Gold One Side
.010 x .400	C51000	H08	Spring	B103	B248	251-0448-05		CR	
.010 x .875	C51000	H08	Spring	B103	B248	251-0448-04	10.490 lb	CR	
.010 x 1.000	C51000	H08	Spring	B103	B248	251-0448-03	2.123 lb	CS	
.010 x 1.875	C51000	H08	Spring	B103	B248	251-0448-02	6.960 lb	CR	
.010 x 3.490	C51000	H08	Spring	B103	B248	251-0448-07	4.950 lb	CR	
.010 x 5.375 x 72.000	C51000	H08	Spring	B103	B248	251-0448-06	14.726 lb	OB	
.010 x 12.000	C51000	H08	Spring	B103	B248	251-0448-00		CR	
.013 x 12.000	C51000	H08	Spring	B103	B248	251-0340-01	5.230 lb	CR	
.013 x 1.000	C51000	H08	Spring	B103	B248	251-0340-02	9.770 lb	CR	
.015 x 12.000 x 22.000	C51000	H08	Spring	B103	B248	258-0537-00	.018 si	CR	+ .0025 Silver Plated, One Side
.0159 x .625	C51000	H08	Spring	B103	B248	251-0464-00		OB	
.0159 x 6.000	C51000	H08	Spring	B103	B248	251-0464-04	5.950 lb	CR	
.017 x .375	C52100	H02	One-half Hard	B103	B248	251-0362-01		OB	
.017 x 1.375	C52100	H02	One-half Hard	B103	B248	251-0362-00		OB	
.025 x .025	C51000	H03	3/4 Hard	B159	B250	258-0534-00	.266 ft	CR	
.025 x .4375	C52100	H02	One-half Hard	B103	B248	258-0405-00		OB	
.025 x .750	C51000	H08	Spring	B103	B248	251-0341-01	.499 oz	CR	
.025 x .750	C52100	H02	One-half Hard	B103	B248	258-0405-02		DL	
.025 x 12.000	C51000	H08	Spring	B103	B248	251-0341-00	3.310 lb	CR	
.032 x 12.000	C51000	H08	Spring	B103	B248	258-0504-00	3.300 lb	CR	
.040 x 12.000 x 96.000				B103	B248	258-0551-00		CR	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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062-5818-00	General Information about Bulk Raw Materials

INDUSTRY STANDARDS REFERENCE

ASTM B1	"Hard Drawn Copper Wire" - Contains requirements for tensile strength, elongation, resistivity, and diameter tolerances for electrolytic tough pitch copper round wire in the hard drawn condition.
ASTM B2	"Medium-Hard Drawn Copper Wire" - Contains requirements for tensile strength, elongation, resistivity, and diameter tolerances for electrolytic tough pitch copper round wire in the medium hard drawn condition.
ASTM B3	"Soft or Annealed Copper Wire" - Contains requirements for tensile strength, elongation, resistivity, and diameter tolerances for electrolytic tough pitch copper round wire in the annealed condition.
ASTM B152	"Copper Sheet, Strip, Plate and Rolled Bar" - Contains requirements for tensile strength, hardness, grain size, chemical composition, and embrittlement testing for various grades and tempers of copper in these product forms. Does not specify dimensional tolerances.
ASTM B248	"General Requirements for Wrought Copper and Copper Alloy Plate, Sheet, Strip, and Rolled Bar." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B36, B103, B121, B122, B152, B169, B194, B291, B422, B465, B534, B591, and B592.
ASTM B249	"General Requirements for Wrought Copper and Copper Alloy Rod, Bar, and Shapes." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, B453, and B455.
ASTM B250	"General Requirements for Wrought Copper Alloy Wire." - Contains dimensional tolerance requirements for round and rectangular wire ordered under these specifications: ASTM B16, B99, B134, B159, B197, B206, and B412.
ASTM B301	"Free Cutting Copper Rod and Bar" - Contains requirements for chemical composition and mechanical properties for various grades and tempers of free cutting copper bars. Does not specify dimensional tolerances.
ASTM B451	"Copper Foil, Strip and Sheet for Printed Circuits and Carrier Tapes" - Contains requirements for both electrodeposited and rolled copper for chemical composition, tensile properties, dimensional tolerances, solderability, and defect allowances such as dents, pits and pinholes.
ASTM B591	"Copper-Tin-Zinc Alloys in Plate, Sheet, Strip and Rolled Bar" - Contains requirements for chemical composition, grain size, tensile strength, and hardness for various alloys and tempers of these product types. Does not specify dimensional tolerances.

CATALOG WRITER: CAROLE JACK, 629-3029

COPPER & MISCELLANEOUS COPPER ALLOYS

WIRE

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.006 Dia .0203 Dia Random Lengths on Dia Spool .0938 Dia x 12 Feet .188 Dia	C41300 C18700 C11000	H01 H04 H04	Hard 1/4 Hard Hard Hard	B1 B591 B301 B1	B1 B248 B249	258-0513-00 258-0340-00 251-0488-00 258-0533-00	.040 ft 25.170 to .015 in 8.300 lb	CR CR CR CR	.0001 to .0002 14K Gold Plate

BAR

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.125 x .750 x 12 Feet	C11000	H02	One-half Hard	B152	B248	251-0418-00		OB	
.125 x 1.500 x 12 Feet	C11000	H02	One-half Hard	B152		251-0417-00		OB	
.125 x 2.000 x 12 Feet	C11000	H02	One-half Hard	B152	B248	258-0491-00		OB	
.1875 x .750 x 12 Feet	C11000	H04	Hard	B152	B248	251-0361-00		OB	
.250 x 1.500 x 12 Feet	C11000	H04	Hard	B152	B248	251-0370-00		OB	
.500	C14500 or C18700	H02	One-half Hard	B301	B249	258-0439-00	.154 in	CR	

FOIL

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.0013 x 24		O60	Rolled, Annealed			254-0695-00	.005 si	CR	Treated with Anti-oxidant
.0015 x .293 x 2500 Foot Min	C11000	O60	Drawn, Annealed	B152	B248	258-0434-00	7.280 lb	CR	16-inch Diameter Spool
.0015 x 3	C11000			B152		258-0547-00	22.500 oz	PP	
.002 x .346	C11000	O60	Drawn, Annealed	B152	B248	258-0435-00	3.900 lb	CR	16-inch Diameter Spool
.002 x .383 x 2500 Foot Min	C11000	O60	Drawn, Annealed	B152	B248	251-0466-02	5.380 lb	CR	16-inch Diameter Spool
.002 x .473 x 2500 Foot Min	C11000	O60	Drawn, Annealed	B152	B248	258-0391-00	6.156 lb	CR	16-inch Diameter Spool
.002 x .500 x 2500 Foot Min	C11000	O60	Drawn, Annealed	B152	B248	251-0466-00	3.900 lb	CR	16-inch Diameter Spool
.002 x .680 x 1500 Foot Min	C11000	O60	Drawn, Annealed	B152	B248	258-0425-00	5.990 lb	CR	16-inch Diameter Spool
.002 x 1.000 x 1500 Foot Min	C11000	O60	Drawn, Annealed	B152	B248	258-0493-00	3.900 lb	CR	14-inch Diameter Spool
.0027 x 24		O60	Rolled, Annealed			254-0696-00	.007 si	CR	Treated with Anti-oxidant
.004 x .080						176-0176-00	.021 ft	CR	Tin Plated
.0042 x 5.500 Coil Stock	C11000	H01	1/4 Hard	B152	B248	251-0330-04	8.450 lb	CR	
.0042 x 30.000	C11000	H01	1/4 Hard	B152	B248	251-0330-00	6.120 lb	CS	
.005 x 1.375 Coil Stock	C11000	O60	Soft Annealed	B152		251-0365-03		CR	
.005 x 12.000 Coil Stock	C11000	O60	Soft Annealed	B451	B248	251-0365-00	2.930 lb	CR	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

STRIP

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.010 x .500 Coil Stock	C11000	O60	Soft Annealed	B152	B248	251-0353-01	8.660 lb	CR	
.0108 x .625 Coil Stock	C11000	O60	Soft Annealed	B152	B248	251-0353-04	3.000 lb	CR	
.0108 x .700 Coil Stock	C11000	O60	Soft Annealed	B152	B248	251-0353-05	2.720 lb	CR	
.0108 x .750	C11000			B152	B248	251-3015-00	2.940 lb	CR	
.0108 x .875	C11000	O60	Soft Annealed	B152	B248	251-0353-02	3.150 lb	CR	
.0108 x 1.250	C11000	O60	Soft Annealed	B152	B248	258-0488-00	.090 ft	CR	
.0108 x 1.375 Coil Stock	C11000	O60	Soft Annealed	B152	B248	258-0005-00	.187 ft	CR	
.0108 x 1.750	C11000	O60	Soft Annealed	B152	B248	251-0353-03	2.370 lb	CR	
.0108 x 12.000 Coil Stock	C11000	O60	Soft Annealed	B152	B248	251-0353-00	5.470 lb	CR	
.019 x .500 x 12 Feet	C11000	O60	Soft Annealed	B152	B248	251-0420-00		OB	
.0216 x .875	C11000	O60	Soft Annealed	B152	B248	251-0338-01	2.102 lb	CS	
.0216 x 1.000	C11000	O60	Soft Annealed	B152	B248	251-0338-03	3.830 lb	CR	
.0216 x 1.125 x 100 Foot	C11000	O60	Soft Annealed	B152	B248	258-0518-00	.183 ft	CR	
.0216 x 1.250	C11000	O60	Soft Annealed	B152	B248	176-0170-00	1.430 lb	CS	
.0216 x 2.750	C11000	O60	Soft Annealed	B152	B248	251-0338-02	2.750 lb	CR	
.0216 x 12.000 Coil Stock	C11000	O60	Soft Annealed	B152	B248	251-0338-00	.336 oz	CR	
.032 x 12.000 x 22.000	C11000	H00	1/8 Hard	B152	B248	258-0329-00	2.420 lb	CR	

SHEET

Size	Alloy ^a	Standard Temper Designation ^a	Former Temper Designation	Specification ASTM ^a	Tolerance ASTM ^a	Part Number	Codes ^b		Other
							Cost	ST	
.065 x 36.000 x 96.000	C11000	H04	Hard	B152	B248	258-0448-00	.050 si	CR	
.065 x 36.000 x 96.000	C11000	O60	Soft Annealed	B152	B248	251-0416-00	.048 si	CR	
.00675 x 30.000 Coil Stock	C11000	O60	Soft Annealed	B152	B248	258-0490-00		OB	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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SECTION 12

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TEK STANDARDS PERTAINING TO MATERIALS

062-1702-00	Welding, Soldering & Brazing
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INDUSTRY STANDARDS REFERENCE

ASTM B103	"Phosphor Bronze Plate, Sheet, Strip and Rolled Bar" - Contains specifications for chemical composition, grain size, mechanical properties and hardness for various mill tempers in these product types; does not specify dimensional tolerances.
ASTM B139	"Phosphor Bronze Rod, Bar and Shapes" - Contains specifications for chemical composition and mechanical properties for three mill tempers in these product types. Does not specify dimensional tolerances.
ASTM B159	"Phosphor Bronze Wire" - Contains specifications for chemical composition, mechanical properties, and bent test limits for wire less than 1/2 inch diameter in various mill tempers. Does not specify dimensional tolerances.
ASTM B248	"General Requirements for Wrought Copper and Copper Alloy Plate, Sheet, Strip, and Rolled Bar." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B36, B103, B121, B122, B152, B169, B194, B291, B422, B465, B534, B591, and B592.
ASTM B249	"General Requirements for Wrought Copper and Copper Alloy Rod, Bar, and Shapes." - Contains dimensional tolerance requirements for the above products for material ordered under these product specifications: ASTM B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, B453, and B455.
ASTM B250	"General Requirements for Wrought Copper Alloy Wire." - Contains dimensional tolerance requirements for round and rectangular wire ordered under these specifications: ASTM B16, B99, B134, B159, B197, B206, and B412.

COPPER-NICKEL-ZINC

STRIP

Size	Alloy ^a	Temper	Specification ASTM ^a	Tolerances ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.0359 ± .0025 x 6.000	C75200	Soft	B122	B248	258-0319-00		OB	18% Nickel

SHEET

Size	Alloy ^a	Temper	Specification ASTM ^a	Tolerances ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.025 x 24.000 x 96.000	C75200	One-half Hard	B122	B248	258-0355-00		OB	
.049 x 12.000 or 24.000 x 96.000	C75200	One-half Hard	B122	B248	258-0354-00		OB	

WIRE

Size	Alloy ^a	Temper	Specification ASTM ^a	Tolerances ASTM ^a	Part Number	Codes ^b		Other
						Cost	ST	
.015 x .188	C75200	One-quarter Hard	B122	B248	258-0357-00		OB	
.025 x .188	C75200	One-quarter Hard	B122	B248	258-0355-01	.115 oz	CS	

Temper		Tensile Strength psi		Approximate Rockwell Hardness			
				B Scale		Superficial	
						30-T	
Standard Designation	Former Designation	Min	Max	Min	Max	Min	Max
H01	One-quarter Hard	58,000	72,000	50	75	49	67
H02	One-half Hard	66,000	80,000	68	82	62	72
H04	Hard	78,000	91,000	80	90	70	76
H06	Extra Hard	86,000	98,000	87	94	74	79
H08	Spring	90,000	101,000	89	96	75	80

A guide for the selection and use of beryllium-copper and beryllium-nickel alloys is available from the Metallurgical Lab. These two alloys are among the most widely used at Tek for producing springs, contact switches, retainer clips and other similar components.

The guidelines were written by Kwaku Mensah, and describe the electrical and mechanical properties of the alloys, as well as the advantages and disadvantages associated with each. Selection and factors are based on electrical and thermal conductivity, yield strength, corrosion and wear resistance, fatigue and impact strength and other criteria.

To make the best choice of materials, it is important that designers be aware of the unique properties of these alloys. If you would like a copy of the selection guidelines, send your request to the Metallurgical Lab (38-314).

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

NICKEL-CHROMIUM-IRON SEALING ALLOY**PER ASTM F31**

Size	Temper	Part Number	Codes ^a	
			Cost	ST
.025 x .125	Annealed	251-0841-00	1.600 lb	CR
.025 x .125		258-0422-00	149.520 lb	CR
.025 x 8.000		251-0994-00	6.250 lb	CR

Alloy 426

Chemical Composition %	
Element	Composition Percent
Nickel	42 Nominal
Chromium	5.6 Nominal
Carbon	.07 Maximum
Manganese	.25 Maximum
Phosphorus	.025 Maximum
Sulphur	.025 Maximum
Silicon	.3 Maximum
Aluminum	.2 Maximum
Iron	Balance

Thermal Expansion	
Temperature Range °C	Coefficient $\mu\text{m/m}^\circ\text{C}$
30-350°C (86 to 662° F)	8.5 to 9.2
30-425°C (86 to 797°F)	9.7 to 10.4

Physical Properties		
Density	8.12 gm/cc	.294 lb/cu in
Melting Point	1425°C	2597°C
Thermal Conductivity at 20-100°C (68 to 212°F)	.029 gm, cal/sq cm/sec/°C/cm .023 Btu/sq ft/sec/°F/in	
Electrical Resistivity		
20°C (68°F)	95 microhm/sq cm/cm	570 ohms/cmil/ft
Curie Temperature	295°C	563°F

Mechanical Properties (Annealed)		
Tensile Strength	56.2 kg/sq mm	80,000 psi
Yield Strength, .2% offset	28.1 kg/sq mm	40,000 psi
Elongation, % in 2 in (5.08 cm)	30	
Reduction in Area (percent)	70	
Hardness (Rockwell 15T)	86	
Modulus of Elasticity	16.2 x 10 ³ kg/sq mm	23 x 10 ⁶ psi
Poisson's Ratio	.28	

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

IRON - NICKEL - COBALT - SEALING ALLOY

PER ASTM F15^a
FOIL

Size	Temper	Finish	Part Number	Codes ^b	
				Cost	ST
.003 x .062 .003 ± .0005 x 6.5 .005 ± .0005 x 8 Feet	Full Hard Annealed	Belt Polish Belt Polish	258-0364-00 258-0332-00 258-0446-00	28.000 Pound 22.280 Pound	DL CR CR

STRIP

Size	Temper	Finish	Part Number	Codes ^b	
				Cost	ST
.010 ± .0005 x 8 ± .062 x 9.5	Annealed	Mill	258-0370-00	4.288 Sheet	CR

TUBE

Size	Temper	Finish	Part Number	Codes ^b	
				Cost	ST
.088 ± .002 OD x .0255 ± .001 ID x 6 Feet	1/8 - 1/4 Hard	Cold Drawn	251-0680-00	.652 Inch	CR

TENSILE PROPERTIES

Typical values representing results obtained at various temperatures with a strain rate of 800%/hour.					
Temp °C	.5% Yield Strength psi	Ultimate Strength psi	Uniform Elong %	Total Elong %	Reduction of Area %
21	59,500	77,500	16.78	35.4	69.
213	39,000	58,500	18.59	32.08	73.2
308	32,500	54,500	22.12	34.79	65.2
400	30,000	50,000	20.9	36.33	74.
500	26,500	42,000	21.69	33.96	71.
600	23,500	36,000	19.45	28.4	35.
738	21,500	25,000	6.87	18.23	25.
790	17,100	19,000	5.21	14.65	21.6

MAGNETIC PROPERTIES

Magnetic Losses				
Thickness Inches	Magnetic Losses, Watts per Pound			
	10 kg 60 cps	10 kg 840 cps	2 kg 5000 cps	2 kg 10,000 cps
.01	1.05	23.4	16.6	41.
.03	1.51			
.05	2.77			

MAGNETIC PERMEABILITY

Flux Density (Gausses)	Magnetic Permeability
500	1000
2000	2000
7000	3700 (Maximum Value)
12000	2280
17000	213

THERMAL EXPANSION

After annealing in hydrogen for one hour at 900°C and fifteen minutes at 1100°C, the average linear coefficient of expansion will fall within specified limits below.	
Temperature Range, °C	Average Linear Coefficient of Expansion μm/m°C
SPECIFIED UNITS	
30-500	4.6 to 5.2
30-450	5.1 to 5.5
TYPICAL EXPANSION DATA	
30-200	5.5
30-300	5.1
30-400	4.9
30-450	5.3
30-500	6.2
30-600	7.9
30-700	9.3
30-800	10.4
30-900	11.5

ELECTRICAL RESISTIVITY

Typical resistance at 25°C - 49 microhms/cm - 294 ohms/cm/ft	
Although close tolerances are not guaranteed on the electrical properties, these are expected to be fairly uniform due to the close limits set on chemical composition. Listed below are results of a typical test.	
Temperature, °C	Relative Resistance
25	1.
100	1.28
200	1.64
300	1.97
400	2.19
500	2.31
600	2.38

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

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MISCELLANEOUS BULK MATERIALS

Part Number	Material	Size	Other	Codes ^a	
				Cost	ST
251-0419-00	Iron Chromium, Al.	.020 x 1.500 x 10/12 Foot	±20 PPM, .02125 μ/ft ±1%	.589 oz	OB
251-0419-01	Iron Chromium, Al.	.0186 x 1.750 Minimum	Alloy 815, ±20 PPM, .02125 μ/ft ±5%		CR
251-0508-00	Tin Bar			.692 oz	DL
251-0555-00	Inconel Nickel Alloy 600	.020 x .125	Ni, Alloy, Rockwell Sprficial, 150 N 78-80 Spring		CR
251-0570-00	Steel Wire, Tinned	.006 x .187			OB
251-0702-00	Monel Strip	.020 x 2.625	Rockwell 15 T 75-85		OB
251-0736-00	Monel K500	.003 x 6.000	One-half Hard		OB
251-0737-00	Monel K500	.005 x 6.000	One-half Hard		OB
251-0740-00	Iron Ingot	.020 ± .001 x .250 ± .005			DL
251-0745-00	Tin-Lead Foil	.0004 ± 10% Max x .250 ± .016	2% Antimony		DL
251-0760-00	Tin-Lead Foil	.0004 ± 10% Max x .625 ± .016	2% Antimony		DL
251-0819-00	Nickel Foil	.002 x .050			OB
251-0833-00	Nickel Foil 600 Ribbon	.005 x .125	Spring Temper, Rockwell 15N 76.500 Min	1.396 oz	CR
251-0840-00	Nickel Foil 600 Ribbon	.005 x .100	Spring Temper, Rockwell 15N 78-80	.038 gr	CR
251-0846-00	Nickel Foil	.005 x 2.000	Annealed, Ultrabrite Finish, Alloy 200, ASTM B162 ^b	7.870 lb	CR
251-0854-00	Tin-Lead Foil	.00025 ± 10% Max x .375 ± .016	2% Antimony		DL
251-0872-00	Nickel 270	.008 x .045	Round Edge, Annealed	.087 gr	CR
251-0898-00	Nickel Foil	.005 x 2.200	ASTM B162 ^b #7.5 Micro-grain Size or Smaller, Mirror Finish, Annealed	25.000 lb	CR
251-0902-00	Nickel Foil	.002 x .250	One-quarter Hard	.059 gr	CR
251-0990-00	Iron-Nickel Strip	.015 x 4.500	Carpenter 49FM	6.520 lb	CR
251-0996-00	Iron-Nickel Bar	1.000 Diameter	Carpenter HI Perm		OB
251-3023-00	Tungsten Carbide Wire	.008 Diameter x 2.000	Rockwell A-92	4.899 ea	CS
251-3030-00	Zinc Alloy Ingot	1.375 x 2.688 x 24.000	Alloy AG40A 4-Section (ASTM B240 ^b)	.700 lb	CR
251-3061-00	Nickel Chrome Strip	.010 x 3.500	Alloy X-750 AMS-5541, Bright Annealed		DL
251-3069-00	Tin-Lead Foil	.00025 x .250 ± .016	2% Antimony		DL
257-0001-00	#9F Catalyst		Hydrochloric Acid, Stannous Chloride, Palladium Chloride		DL
257-0011-00	Potassium Cyanide		Reagent #2107	2.640 lb	CR
257-0012-00	Aluminum Chelate			12.750 gl	CR
257-0017-00	Cadmium Anode		Two Inch Balls	3.000 lb	CR
257-0019-00	Copper Mix		#328 Shipley, Electroless		DL
257-0032-00	Indium Antimonide		Grade 40	5.800 gr	CR
257-0045-00	Tungsten Wire	8.5 Flat Wire	Fabric .005 Mesh Weave		OB
257-0095-00	Tungsten Wire	.001 Diameter			DL
257-0116-00	Titanium Slug	.250 Diameter x .500	99.99% Pure	5.450 gr	CR
258-0007-00	Iron-Nickel-Cobalt, Silver Clad	.005 x .250		3.220 lb	CR
258-0345-00	Nickel Foil	.500 x .0025	ASTM F3 ^b , Bright Finish		DL
258-0373-00	Dura Nickel Strip	.025 x .375	Alloy 301, Cold Drawn, Age Hardened	39.070 lb	CS
258-0395-04	Be Ni Strip	.006 ± .0004 x 3.500 ± .008	Alloy 440, Annealed	40.720 lb	CR
258-0410-00	Manganin Foil	.001 x 6.000	Alloy 301, Cold Drawn, Age Hardened	3.928 oz	CR
258-0496-00	Copper Silver Foil	.002 x 1.000		1.760 in	CR
258-0497-00	Nickel Strip	.010 x 6.000	Dead Soft, ASTM B162 ^b	6.410 lb	CR
258-0506-00	Nickel Wire	.010 x .125 Wide	Alloy 200, ASTM B162 ^b		DL
258-0508-00	Phosphor Bronze				CR
258-0512-00	Nickel Silver		.5% Lithium Stearate	2.380 lb	CR
258-0522-00	Nickel Alloy Wire	.025 Diameter	Alloy 52 (51% Nickel & 49% Iron)	11.640 lb	CR
258-0532-00	Nickel & Chromium	.010 ± .0005 x 3.500 ± .001	Alloy X-750, Bright Annealed	12.370 lb	CR
258-0548-00	Iron-Nickel-Cobalt	.040 x 12.000 x 22.000		100.000 lb	PP

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MISCELLANEOUS PRECIOUS METALS

Part Number	Codes ^a		Description
	Cost	ST	
176-0243-00	.059 ft	CR	Gold Wire, .001 Diameter, 2 Inches Aluminum Spool, 99.99% Pure
176-0261-00	.199 ft	CR	Gold Wire, .0007 Diameter, 2 Inches Aluminum Spool, 99.99% Pure
257-0020-00	526.000 to	CR	Gold Replenisher, Orotherm HT-T, Plating Salt
257-0025-00	4.516 gr	CR	Gold Liquid, Englehard
257-0026-00		OB	Silver Wire, .06745 Diameter, .250 Hard, F1000
257-0027-00	100.000 to	CR	Gold Flake, Metz #14
257-0030-00		OB	Platinum Alloy Foil, .021 x .003, 90% Platinum and 1% Iridium
257-0035-00		OB	Silver Disk, .350 Diameter x .010 Grade, 99.99% Pure, ASTM B413-67T ^b Annealed
257-0039-00		DL	Gold Salts, Lea Ronal Aurall Gold Metal
257-0040-00		DL	Gold Salts, Auro-Vel upa-24
257-0043-00		DL	Gold Salts, Orosene PC
257-0068-00	15.445 gr	CR	Gold Replenisher, #402 Pur-A Gold
257-0069-00	.071 ea	PP	Gold/Silver Preformed, .020 Diameter x .001 Thick
257-0070-00	.079 ea	CR	Gold Preformed, 96.7% Gold, 3.1% Silicon
257-0077-00	2.500 gr	CR	Gold Resinate, Englehard A-2660
257-0081-00	165.750 to	CR	Copper Alloy Wire, .020 Diameter With .00125 Gold Layer
257-0083-00	.035 ea	CR	Gold/Tin Preform, .020 Diameter x .001 Thick, 80% Gold, 20% Tin
257-0084-00	.371 ft	CR	Gold Wire, .0007 Diameter, 75 Feet Per Spool, 99.99% Pure
257-0085-00	1.720 ft	CR	Gold Foil, .010 Diameter x .001, 50 Feet Per Spool, 99.99% Pure
257-0086-00	6.000 ft	CR	Gold Foil, .025 Diameter x .001 Thick, 99.99% Pure
257-0087-00	.205 ea	CR	Gold Preform, .100 Square Inch x .002, 99.99% Pure
257-0088-00	1.450 ft	CR	Gold Wire, .001 Diameter, 50 Feet Per Spool, 99.99% Pure
257-0089-00	6.000 ft	CR	Gold Foil, .035 Diameter x .001 ± .0002 Thick x 100 Feet on 2 Inch Aluminum Spool, 99.99% Pure
257-0096-00	.095 ft	CR	Gold Wire, .0013 Diameter, on 2 Inch Aluminum Spool, 99.99% Pure
257-0097-00	.200 ft	CR	Gold Wire, .002 Diameter, on 2 Inch Aluminum Spool, 99.99% Pure
257-0099-00	1.100 ft	CR	Gold Foil, .005 x .001, 50 Feet on 2 Inch Aluminum Spool, 99.99% Pure
257-0100-00	484.070 to	CR	Gold Replenisher
257-0101-00	1.620 ea	CR	Gold Preform, .050 Diameter x .002 Thick
257-0102-00	2.630 ft	PP	Gold Wire, .005 Diameter, 99.99% Pure
257-0104-00		DL	Gold Salts, Auro-Vel upa-24
257-0106-00	.115 ea	CR	Gold Preform, .100 Square Inch x .001, 99.99% Pure
257-0108-00	8.450 oz	CR	Silver Replenisher, Sal-A-Salt Electroplating Process
257-0109-00	.048 ea	CR	Gold Preform, .020 Diameter x .001 Thick, 99.99% Pure, Arsenic .1%
257-0110-00		DL	Gold Liquid, Aurobond TCL Electroplating Process
257-0115-00	.024 ea	CR	Gold Preform, .015 Diameter x .001 Thick, 99.99% Pure, Arsenic .1%
257-0117-00	4.700 gr	CR	Palladium Slug, .250 Diameter x .500 Long, 99.999% Pure
257-0118-00	27.400 gr	CR	Gold Slug, .250 Diameter x .250 Long, 99.95% Pure
257-0120-00	506.910 to	CR	Gold Replenisher, #ARC 407
257-0121-00	490.200 to	CR	Replenisher, Gidaruna, Gold Salts
257-0122-00	.918 gr	CR	Gold Bath, Gold Strike Solution
257-0129-00	464.570 to	CR	Gold Salts, Lea Ronel Auronal #6
257-0133-00	1.367 ft	CR	Gold Wire, .0007 Diameter
257-0134-00	.450 ea	PP	Gold Preformed, .060 Square x .005 Thick
257-0136-00	.169 ft	CR	Gold Wire, .001 Diameter, 99.99% Gold
257-0137-00	1.600 ea	PP	Gold Preform, .150 x .300 x .0015
257-0139-00	5.000 ft	EN	Gold Wire, .003 Diameter, 99.99% Gold

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^b The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

SILICON WAFERS

Part Number	Codes ^a		Description
	Cost	ST	
257-0029-00		NP	P-Type Monocrystalline
257-0049-00	3.450 ea	CR	2.000 Diameter x .015, 100 Ω , Boron Doped
257-0057-00	5.500 ea	CR	2.000 Diameter, 10 Ω , Boron Doped, P-Type
257-0057-01		CR	2.000 Diameter, 10 Ω , Phosphorus Doped, N-Type
257-0060-01		PP	2.000 Diameter, 4 Ω , Phosphorus Doped, Oxidized
257-0066-00		NP	2.000 Diameter, 1 Ω
257-0080-00		NP	2.000 Diameter, .01 Ω , 100 Orientation, 15 Mil Thick
257-0082-00		NP	2.000 Diameter, .005 Ω
257-0090-00	5.550 ea	CR	2.000 Diameter, 50 Ω
257-0092-00	84.000 ea	CR	2.100 Long x 1.750 x .040 Thick
257-0111-00	7.450 ea	MP	3.000 Diameter, .250 Ω , 111 Orientation
257-0112-00	6.20 ea	CR	3.000 Diameter, 10-20 Ω , 111 Orientation, Boron Doped, P-Type
257-0113-00	6.500 ea	CR	3.000 Diameter, 38-100 Ω , 111 Orientation
257-0124-00	10.750 ea	CR	4.000 Diameter, 25 Ω , Boron Doped, P-Type
257-0125-00	11.500 ea	EN	4.000 Diameter, 40 Ω , Boron Doped, P-Type
257-0126-00	10.300 ea	EN	4.000 Diameter, 1.5 Ω , Phosphorus Doped, N-Type

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

SOLDER AND FLUX

Composition ^a %	Size	Spools	Flux Type	Other	Part Number	Codes ^b	
						Cost	ST
50 Sn/40 Pb/10 Bi	.032 Diameter	5 Pound	RA	Rosin Core	251-0785-00	6.774 lb	CR
50 Sn/40 Pb/10 Bi	.050 Diameter		RA	Rosin Core	251-0786-00		DL
50 Sn/50 Pb	.125 Diameter			Rosin Core	251-0511-00		DL
50 Sn/50 Pb	.032 Diameter			Rosin Core	251-0683-00		DL
50 Sn/50 Inch	.060 OD x .025 ID x .020 Thick			Preform	251-0821-00	.008 ea	CR
50 Sn/50 Inch	.020 Diameter	1 Pound			251-0962-00		DL
50 Sn/50 Inch	.025 Diameter			Preform	251-0915-00	.040 ea	CR
60 Sn/37 Pb/3 Ag	.20 AWG	Small Coil	RA	Rosin Core	006-0664-00	.044 ft	CR
60 Sn/37 Pb/3 Ag	.20 AWG	1 Pound	RA	Rosin Core	251-0514-00	13.970 lb	CS
60 Sn/37 Pb/3 Ag	.20 AWG	5 Pound	RA	Rosin Core	251-0515-00	22.000 lb	CR
60 Sn/40 Pb	.005 Thick x .375 x .625			Preform	251-0988-01	.043 ea	CR
60 Sn/40 Pb	.312 OD x .190 ID x .020 Thick			Preform	251-0682-00		DL
60 Sn/40 Pb	.045 ID x .075 OD x .015 Thick			Preform	251-3014-00	.110 ea	CR
61.5 Ag/24 Cu/14.5 Inch	.185 Square x .002 Thick			Preform	251-3008-00		DL
61.5 Ag/24 Cu/14.5 Inch	.250 Diameter x .003 Thick			Preform	251-0900-00	.029 ea	CR
61.5 Ag/24 Cu/14.5 Inch	.300 Square x .002 Thick			Preform	251-0822-00	.154 ea	CR
61.5 Ag/24 Cu/14.5 Inch	.500 OD, .190 ID x .005 Thick			Preform	251-0850-00	.133 ea	CR
62 Sn/36 Pb/2 Ag					006-6026-00	7.670 lb	CR
62 Sn/36 Pb/2 Ag					251-0933-00	.310 gr	CR
63 Sn/37 Pb	18 AWG	Small Coil	RA	Rosin Core	006-0663-00	.031 ft	CR
63 Sn/37 Pb	16 AWG	5 Pound	RA	Rosin Core	251-0512-00		DL
63 Sn/37 Pb	18 AWG	5 Pound	RA	Rosin Core	251-0513-00		DL
63 Sn/37 Pb	.125 Diameter, .500 Pound Roll	Insul Sleeve, Carrier Strip			251-0653-00		DL
63 Sn/37 Pb	.060 ID x .520 Long			Preform	251-0963-00	.030 ea	CS
63 Sn/37 Pb	.375 x 15.000	1.5 Pound Bar		Rosin Core	251-0545-00	2.890 lb	CR
63 Sn/37 Pb	.125 Diameter	21 Pound Ingots		Rosin Core	251-0545-01		DL
63 Sn/37 Pb		17 Pound			251-0545-02	2.860 lb	CR
63 Sn/37 Pb	.015 Diameter	1 Pound	RA	Rosin Core	251-0738-00	16.950 lb	CS
63 Sn/37 Pb	.205 OD x .157 ID x .020 Thick	5 Pound		Preform	251-0787-00		OB
63 Sn/37 Pb	.032 Diameter		RA	Rosin Core	251-0804-01		DL
63 Sn/37 Pb	.043 OD x .027 ID x .008 Thick	1 Pound		Preform	251-0806-00	.013 ea	CR
63 Sn/37 Pb		1 Pound	RA	Rosin Core	251-0807-01	6.790 lb	CR
63 Sn/37 Pb				Preform	251-1819-00		DL
63 Sn/37 Pb				Preform	251-3111-00		DL
63 Sn/37 Pb	.070 OD x .030 ID x .010 Thick			Preform	251-1738-00	.177 ea	CR
88 Au/12 Ge	.021 Diameter x .001 Thick			Preform	251-0691-00	.007 ea	CR
89 Sn/7.5 Sb/3.5 Cu	.188 Diameter	50 Pound		Preform	251-0752-00		DL
94 Pb/1 Ag/5 Sn	.032 Diameter	12 Sticks per Pound	RMA	Rosin Core	251-0551-00	8.500 lb	CR
97.5 Pb/2.5 Sn	.025 Diameter x .0015 Thick			Preform	251-0724-00		DL
Sn/Al	.312 Diameter				251-0648-00		DL
100 Sn	.032 Diameter			Rosin Core	251-3108-00		DL

FLUX

Part Number	Description	Codes ^b	
		Cost	ST
252-0045-00	Formula 1544	2.345 pt	CR
256-0533-00	#2213 Saf-T-Flux		OB
252-0093-00	Kester #2331	15.070 gl	CR

SOLDER PASTE

Part Number	Other	Codes ^b	
		Cost	ST
256-0664-00	DP9429	.890 gr	CR
256-0665-00	MultiCore XM-27330	.147 gr	CR

^a

Aluminum - Al
Antimony - Sb
Bismuth - Bi
Copper - Cu
Germanium - Ge
Gold - Au
Indium - In
Lead - Pb
Silver - Ag
Tin - Sn

SOLDER INFORMATION

"Solder" refers to soft solder composed primarily of tin and lead. Soft solder is used for the purpose of joining together two or more metals at temperatures below their melting points. For general assembly line and soldering, a eutectic, rosin Core solder (63% tin, 37% lead) is used because it has one sharp melting point of 361°. Other alloys stay plastic for a short time (plastic range) and joints will be damaged if parts are moved during this time. For flow soldering, 63/37 bar solder is used. Solder used in production areas meets the requirements of Federal Specification QQ-S-571.

For further information, refer to Assembly Workshop Spec. Manual or call Dan Harper, 627-2523.

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

SOLDER AND FLUX (cont)

SOLDERS USED AT TEK

Nominal Composition % (See Tek Part Numbers Page 12-8)	Melting Ranges °C/°F (Approximate Only)		Density gms/cm ³
	Solidus ^a	Liquidus ^b	
50 Sn/40 Pb/10 Bi	120/248	167/334	8.77
50 Sn/50 In	118/244	125/257	7.30
50 Sn/50 Pb	183/361	212/413	8.85
59 Sn/37 Pb/4 Ag	190/374	262/503	8.60
60 Sn/37 Pb 3 Ag	183/361	252/485	8.50
60 Sn/40 Pb	183/361	188/374	8.65
61.5 Ag/24 Cu/14.5 In	630/1166	705/1301	9.48
63 Sn/37 Pb	183/361	183/361	8.42
88 Au/12 Ge	356/673	356/673	14.67
89 Sn/7.5 Sb/3.6 Cu	241/466	354/669	7.39
95 Pb/5 Sn	310/590	314/598	11.30
95 Sn/5 Sb	233/452	240/464	7.25
97.5 Pb/1.5 Ag/1 Sn	309/588	309/588	11.28
97.5 Pb/2.5 Ag	303/579	303/579	11.35
97.5 Pb/2.5 Sn	32/90	3.6/600	11.33

SUGGESTED SOLDERS FOR ALUMINUM

Composition ^c %	Melting Ranges °C/°F (Approximate Only)		Density gms/cm ³	Wetting Ability on Aluminum	Relative Corrosion Resistance
	Solidus ^a	Liquidus ^b			
60 Sn/40 Zn	199/390	341/645	7.20	Good	Good
60 Zn/40 Cd	265/509	335/635	7.75	Very Good	Fair
70 Zn/30 Sn	199/390	376/708	7.20	Good	Good
70 Sn/30 Zn	199/390	311/592	7.20	Fair	Fair
80.1 Pb/18 Sn/1.9 Ag ^d	178/350	270/518	10.10	Very Good	Good
90 Zn/10 Cd	265/509	399/750	7.20	Good	Fair
91 Sn/9 Zn	199/390	199/390	7.20	Fair	Fair
95 Sn/5 Al	399/720	399/720	6.64	Good	Very Good
100 Zn (High Purity)	419/787	419/787	7.20	Good	Very Good

^a Temperature at which solder begins to melt.

^b Temperature at which the solder is completely molten.

^c

Aluminum - Al
Antimony - Sb
Bismuth - Bi
Cadmium - Cd
Copper - Cu
Germanium - Ge
Gold - Au
Indium - In
Lead - Pb
Silver - Ag
Tin - Sn
Zinc - Zn

^d ALU-SOL 45D Multicore solder. Suggested soldering temperature is 300 - 350°C.

SOLDER AND FLUX (cont)

SOLDERABILITY CHALK & FLUX SELECTOR GUIDE

Metals	Solderability	Rosin Fluxes			Organic Fluxes Water Soluble	Inorganic Fluxes Water Soluble	Special Flux And/Or Solder
		Non-Activated	Mildly Activated	Activated			
Platinum Gold Copper Silver Cadmium Plate Tin (Hot Dipped) Tin Plate Solder Plate	Easy to Solder	✓	✓	✓	✓	Not Recommended For Electrical Soldering	
Lead Nickel Plate Brass Bronze Rhodium Beryllium Copper	Less Easy to Solder	Not Suitable			✓	✓	
Galvanized Iron Tin-Nickel Nickel-Iron Mild Steel	Difficult to Solder	Not Suitable			✓	✓	
Chromium Nickel-Chromium Nickel-Copper Stainless Steel	Very Difficult to Solder	Not Suitable				✓	
Aluminum Aluminum-Bronze	Most Difficult to Solder	Not Suitable			Not Suitable		✓
Beryllium Titanium	Not Solderable						

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^a Reistered tradename of Allegheny Steel Corporation.
^b Registered tradename of Carpenter Steel Company.

CATALOG WRITER: SANDRA PHILLIPS, 629-3030.

MAGNETIC SHIELDING

Size	Alloy	Part Number	Codes ^a	
			Cost	ST
.014 x 30. x 120	Mumetal ^b	251-0712-00	8.900 lb	CR

Size	Alloy	Part Number	Codes ^a	
			Cost	ST
.024 x 9.25 x 12.	High Permeability "49" ^c	251-0817-00		DL
.024 x 9.6 x 10 Foot	High Permeability "49" ^c	251-0861-00		DL
.025 x 24. x 120.	High Permeability "49" ^c	251-0817-02		DL
.125 x 9.0 x 96.	High Permeability "49" ^c	251-0886-00		DL

Magnetic Shielding Materials (Iron-Nickel) Mumetal ^b			
Composition (% Nominal):	Nickel	77.0	
	Copper	4.8	
	Chromium	1.5	
	Iron	14.9	
Temper: 1 - (For Forming, Bending and Drawing)			
Mechanical, Physical and Magnetic Properties (Cold Rolled)			
Specific Gravity			8.5
Curie Temperature, °C			398.9
Electrical Resistivity			
Microhm Centimeters			56
Ohms Per Circular Mil Foot			337
Ohms Per Square Mil Foot			265
Coercive Force (Hc), Oersteds for B Max From 5000 Gauss			.015
Hysteresis Loss in ergs/cm ³ /cycle for B Max of 5000 Gauss			20
Saturation Induction (B _s), Gauss			7,500
Modulus of Elasticity, psi			
Cold Rolled			30,000,000
Hydrogen Annealed			25,000,000
Ultimate Tensile Strength, psi			
Mill Annealed			90,000
Hydrogen Annealed			64,000
Yield Strength, psi			
Mill Annealed			38,000
Hydrogen Annealed			18,500
Elongation in 2 Inches, Percent			
Mill Annealed			35
Hydrogen Annealed			27
For complete technical data, see Allegheny Ludlum Blue Sheet EM-12 (Available from Engineering Standards).			

Magnetic Shielding Materials (Iron-Nickel) High Permeability "49" ^c			
Composition (% Nominal):	Nickel	48.00	
	Manganese	.50	
	Silicon	.35	
	Carbon	.05	
	Iron	Balance	
Temper: Deep Drawing Quality			
Mechanical, Physical and Magnetic Properties			
Specific Gravity			8.25
Curie Temperature, °C			448.9
Electrical Resistivity			
Microhm Centimeters			48
Ohms per Circular Mil Foot			290
Coercive Force, Oersteds from 5000 Gauss			.02
Saturation Inductance from H-100 Oersteds, Gauss		15,000	
Modulus of Elasticity, psi			
Cold Rolled			24
Mill Annealed			24
Tensile Strength, psi			
Cold Rolled		130,000	
Mill Annealed		80,000	
Elongation, Percent			
Cold Rolled			5
Mill Annealed			32
Rockwell Hardness			
Cold Rolled			B-100
Mill Annealed			B-68
For complete technical data, see Carpenter Steel Company, Technical Data Sheet High Permeability "49" (Available from Engineering Standards.)			

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Registered trademark of the Allegheny Steel Corporation.

^c Registered trademark of the Carpenter Steel Company.

Size	Alloy	Part Number	Codes ^a		
			Cost		ST
.014 x 1.600	Moly Permaloy ^b	251-0959-00	.601	oz	CR
.025 x 30 x 120	Moly Permaloy ^b	251-0591-00	.094	si	OT
.050 x 36 x 120	Moly Permaloy ^b	251-0874-00	.131	si	CR

Typical Chemical Composition			
Nickel	79		
Molybdenum	4		
Iron	17		
Typical Physical, Mechanical and Magnetic Properties			
	No. 1 Forming Temper	No. 2 Stamping Temper	Hydrogen Annealed
Tensile Strength, psi	99,000	160,000	64,000
Yield Strength, psi	49,000	150,000	18,500
Elongation, Percent In 2 Inches	32	1	27
Hardness, Rockwell	B-85	C-28	B-65
Specific Gravity			8.74
Curie Temperature, °F			850
Electrical Resistivity			
Microhm Centimeters			55
Ohms Per Circular Mil Foot			330
Ohms Per Square Mil Foot			260
Coercive Force (Hc), Oersteds, for B _{max} from 5000 Gauss			.015
Hysteresis Loss in ergs/cm ³ /cycle for B _{max} of 5000 Gauss			20
Modulus of Elasticity			
Cold Rolled			30,000,000
Hydrogen Annealed			25,000,000
Saturation Induction, Gauss			8,000

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b Registered tradename of the Carpenter Steel Company.

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062-2848-00	Bend Allowance & Deduction
062-2850-00	Finish, Surface Texture
062-2854-00	Finishes, Chemical & Electromechanical

CATALOG WRITER: SANDRA PHILLIPS, 629-3030

INDUSTRY STANDARDS REFERENCE

- ASTM A29 "General Requirements for Hot Wrought and Cold Finished Carbon and Low Alloy Steel Bars" - This specification applies to hot and cold wrought bars in rounds, squares, hexagons, flats, angles and other shapes in a variety of sizes from 7/32 to 10 inches, depending on product form. This master specification contains chemical composition limits and has permissible tolerances for thickness, width, length, straightness, and other dimensions for various product types and finishes.
- ASTM A108 "Standard Quality Cold Finished Carbon Steel Bars" - Material supplied under this specification is suitable for machining into components or used as shafting in the as finished condition and must conform to additional requirements imposed by ASTM A29. This specification applies only to plain carbon and free cutting steels. A supplement is contained to specify grades for cold heading and forging quality.
- ASTM A109 "Carbon Steel Cold Rolled Strip" - This specification applies to plain carbon (<0.25%) steel strip less than 0.249 in thickness and from 1/2 to 23-15/16 inches wide. Mechanical property and bend test requirements are specified for 5 tempers of materials. Surface and edge finishing methods are specified along with dimensional tolerances for thickness, width, length, and straightness.
- ASTM A165 "Electrodeposited Coatings of Cadmium on Steel" - Contains coating thickness requirements and measurement methods for cadmium coated steels.
- ASTM A228 "Music Spring Quality Steel Wire" - Contains chemical composition, tensile strength, and diameter tolerance limits for high strength steel wire.
- ASTM A229 "Oil Tempered Steel Wire for Mechanical Springs" - Covers requirements for chemical composition, tensile strength, and diameter tolerances for two grades of heat treated steel wire.
- ASTM A366 "Commercial Quality Cold Rolled Carbon Steel Sheet" - Contains bend test and chemical requirements only. Is not applicable to ASTM A109 "Carbon Steel Cold Rolled Strip."
- ASTM A500 "Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes" - This specification applies to tubing with a maximum periphery of 64 inches and maximum wall thickness of 0.625 inches. Contains limits for mechanical properties, formability, composition, and dimensions for 3 grades of carbon steel tubing.
- ASTM A513 "Electric Resistance Welded Carbon and Alloy Steel Mechanical Tubing" - Contains specifications for mechanical properties, composition, condition, and dimensional variations. Applies to higher strength and alloy grades than ASTM A500.
- ASTM A519 "Seamless Carbon and Alloy Steel Tubing" - Similar to ASTM A513, but for seamless tubing.
- ASTM A576 "Special Quality Hot Wrought Carbon Steel Bars" - Contains chemical composition limits for plain carbon and free machining steel bars as well as supplementary requirements for other criteria. Should be used instead of ASTM A108 when higher quality material is needed for stringent heat treating, bending, forging, or machining requirements.
- ASTM A682 "General Requirements for Spring Quality Cold Rolled High Carbon Steel Strip" - Contains limits for composition, grain size, edge type, dimensional tolerance, and finish for high carbon steel strip.

WIRE

Size ^a	Type ^a	Specification ASTM ^a	Temper	Finish	Part Number	Codes ^b	
						Cost	ST
.010 x .400	C1075 1010/1012 Spring	A109	Annealed NO5 Rockwell 46-48 Music Wire	Cold Rolled	251-0998-00	4.610 lb	CR
.012 x 1.000				Cold Rolled	251-0749-00	.042 oz	CR
.015 x .188				CRS Cold Rolled	251-0541-00	.189 oz	CR
.016 x .750					251-0966-00	.809 oz	CS
.018 Diameter				A228	251-3086-00	6.340 lb	CR
.020 Diameter	1050	A228	Music Wire	A228	251-3053-00		DL
.020 Diameter x 2.750 Long		A228	Music Wire		251-3053-01		DL
.040 x .400		A682	Annealed Spring		251-0780-00	9.000 lb	CR
.041 Diameter (18 gauge)		A228	Spring (Music)		251-0837-00	2.046 lb	CR
.050 x .250		A682	Annealed Spring	Cold Rolled, Mill Finish	251-0678-01	1.223 lb	CR
.060 x .625	1010/1018	A109	Annealed	Cold Rolled	251-0528-04	5.587 lb	CR
.062 Diameter	1095		Key Stock		251-0932-00	.030 in	CS
.093 Square x 3 Feet	1095		Key Stock	Smooth Drawn	251-0920-00	.069 in	CR
.093 Diameter x 12 Feet	12L15	A510	Cold Drawn	Cold Finish	251-0690-00	.065 in	CR
.109 x .375		A109	#2	Cold Rolled, Bright Finish	251-0668-00		OB
.125 Diameter	Invar "36"		Annealed	Cold Drawn	251-0814-00	.011 in	CS
.125 Diameter	Ledloy A	A108 (A29)	Annealed	Cold Finish	251-0559-00	.007 in	CR
.156 Diameter	Ledloy			Cold Finish	251-0741-00	.012 in	CR
.187 Square	1095			Smooth Drawn	251-0899-00	.046 in	CS
.188 Diameter	Laled/Ledloy B			Cold Finish	251-0506-00	.011 in	CR
					251-0983-00	.004 in	CR
.188 Diameter	1018	A108 (A29)			251-0937-00	.007 in	CR
.188 Hex x 12 Feet	12L14			Cold Drawn	251-0630-00		OB
.250 Diameter x .185 Inch Long				Bright Basic			
.250 Screw Stock	Laled	A108 (A29)		Cold Drawn	251-0544-00	.009 in	CR
.250 Hex	Ledloy A (300)			Cold Finish	251-0748-00	.010 in	CR
					251-0753-00	.013 in	CR
.312 Hex	Ledloy A (300)			Cold Finish	251-0526-00	.013 in	CR
.312 Diameter	Laled/Ledloy			Cold Finish	251-0526-00	.013 in	CR
.312 Hex	6152				251-0759-00	.010 in	CS

BAR

Size ^a	Type ^a	Specification ASTM ^a	Temper	Finish	Part Number	Codes ^b	
						Cost	ST
.094 x 1.500 x 24.	1020	A29	Brinell 137	Cold Drawn	251-3028-00		DL
.109 x 1.000	1010/1018	A109	One-half Hard	Cold Rolled	251-0726-00	.027 in	CS
.1196 x 1.750	1018	A109	Annealed	Cold Rolled, Dull	251-0869-01	.060 in	CR
.125 x .375	1018	A108 (A29)	Rockwell B 93	Cold Drawn	251-0934-00	.014 in	CR
.125 x .500 x 144.					251-0985-00	.018 in	CR
.188 x .375	1018	A108 (A29)	Rockwell C 65	Cold Rolled, Plated	251-0618-00	.015 in	CR
.250 x .375	1018	A109		Cold Rolled	251-0842-00	.882 lb	CR
.250 x .500	1018	A108 (A29)		Cold Rolled	251-0815-00	.032 in	CS
.250 x 1.250	1018	A108 (A29)		Cold Drawn	251-0935-00	.092 in	CR
.312 x 2.500 x 18.	01 Alloy			Cold Worked	251-3059-00		DL
.375 Diameter	Super Laled	A108 (A29)		Annealed	Cold Drawn	251-0623-00	.476 lb
.375 Diameter	A-10		Annealed	251-0870-00		OB	
.375 x .500	1018		Drawn	Cold Drawn	251-0936-00	.042 in	CS
.437 Hex	Ledloy 300/Laled 1214		Milled	251-0723-00	.027 in	CR	
.438 Diameter	Laled		Cold Finish	251-0646-00	.476 lb	CR	
.500 Diameter	Laled	A108 (A29)	Annealed	Cold Drawn	251-0533-00	.056 in	CR
.500 Hex	Ledloy			Cold Finish	251-0599-00	.030 in	CR
.500 Square	1018			Cold Drawn	251-0891-00	.040 in	CR
.750 Diameter	Ledloy			Cold Finish	251-0601-00	.076 in	CR
.750 Hex	Ledloy A (300)			Cold Finish	251-0676-00	.430 ft	CS
1.000 x 1.500	1018	A108 (A29)	As Drawn	Cold Drawn	251-3004-00	.245 in	CR
1.062 Diameter	Laled/Ledloy 300	A108 (A29)		Cold Finish	251-0681-00		OB
1.187 Diameter	Ledloy			Cold Finish	251-0667-00		OB
1.625 Diameter	1018			Cold Finish	251-0877-00		DL
1.875 Diameter	Ledloy A (300)			Cold Finish	251-0928-00		DL

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

STRIP

Specification Size ^a	Type ^a	ASTM ^a	Temper	Finish	Part Number	Codes ^b	
						Cost	ST
.003 x 3.000 Foil	1095	SAE ^c	camr shtr stl, temp	Polished	251-0784-00	35.580 lb	CR
.008 x 6.000	1095	SAE ^c	Clock Spring		251-0925-00	14.100 lb	CR
.036 x 2.625	1010/1018	A568	Annealed	Cold Rolled, Bright	251-0619-02	.298 lb	CS
.036 x 4.375	1010/1018	A366 (A568)	Annealed	Cold Rolled, Bright	251-0619-03	.365 lb	CS
.060 x 1.250	1010	A109	Annealed	Cold Rolled, #1 or 2	251-0528-03	8.247 lb	CR
.060 x 3.500	1010	A568	Cold Rolled	Dull	251-0528-02	.245 lb	CS
.062 x 1.250	1074		Spring	Cold Rolled	251-0865-00		OB
.083 x 1.625	1010	A109	Full Hard, Spring		251-0866-00		OB
.090 x 1.875	1010/1018	A568		Cold Rolled	251-0975-00		OB
.090 x 3.250	1010	A109	Skin Rolled	#2, Reg Bright	251-0910-00	.624 lb	CS
.090 x 6.312	1010/1018	A366	Annealed	Cold Rolled	251-0620-02	.428 lb	CR

SHEET

Specification Size ^a	Type ^a	ASTM ^a	Temper	Finish	Part Number	Codes ^b	
						Cost	ST
.011 x 31.625 x 48	1010	A366 (A568)	Annealed	#1 Finish, Tin Plated	251-0664-00	2.220 lb	CR
.015 x 36 x 120	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0543-00	.360 lb	CR
.024 x 36 x 120	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0503-00	.407 lb	CR
.030 x 48 x 120	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0529-00	.003 si	CR
.036 x 36 x 120	1010/1018		Annealed	Cold Rolled	251-0619-00	.004 si	CR
.048 x 36 x 120	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0540-00	.005 si	CR
.048 x 48 x 144	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0540-01	.005 si	CR
.050 x 24 x 48	1095	A568	Soft Annealed, Spring	Cold Rolled	251-0678-00	.071 si	CR
.060 x 36 x 120	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0528-00	.006 si	CR
.083 x 23.937 x 120	1095	A684 (A568)	Soft Annealed, Spring	Bright	251-1000-00	.102 si	CR
.090 x 36 x 120	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0620-00	.013 si	CR
.104 x 48 x 120 (12 Gauge)	1010/1018	A366 (A568)	Annealed	Cold Rolled	251-0889-00	.013 si	CR
.109 x 20.250	1095		Annealed	Cold Rolled	251-0677-00	.051 si	CR
.1196 x 48 x 120	1018	A366 (A568)	Annealed	Cold Rolled	251-0869-00	.012 si	CR

TUBE

Specification Size ^a	Type ^a	ASTM ^a	Temper	Finish	Part Number	Codes ^b	
						Cost	ST
.094 OD x .049 ID	1015		One-quarter Hard	Mill Finish	251-0557-00		OB
.437 OD x .035 Wall	4130	A519	Annealed	Cold Drawn	251-0697-00		OB
.750 x 1.500 Rectangle x .083 Wall	MT1010	A513			251-0929-00	.400 ft	PP
.886 x 1.886 x .055 Wall	MT1010	A513		Cold Rolled	251-3002-00		DL
1.000 Square x .065 Wall		A500	As Drawn	Suitable for Plating	251-0834-00		OB
1.250 OD x .156 Wall	1010/108	A513		Cold Drawn	251-0913-00	.236 in	CR

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

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^c Society of Automotive Engineers.

ROD, PINION

Pitch	Teeth	Pitch Diameter	Part Number	Codes ^a	
				Cost	ST
64	12	.187	251-0698-00	6.040 ft	CR
64	16	.250	251-0800-00		OB
64	15	.234	251-0811-00	7.000 ft	CR
48	20	.417	251-0887-00		OB

CONDUIT

Description	Part Number	Codes ^a	
		Cost	ST
.500 Diameter Cold Rolled Galvanized Steel, .025 Wall 1 x 10 Foot Liquid Tight Steel Tube	251-3034-00	.017 in	CR
	251-3035-00	.021 in	CR

MESH

Description	Part Number	Codes ^a	
		Cost	ST
.063 Square Tin/Copper Plated Steel .063 x 1.100 Foot Long Tin/Copper Plated Steel .063 x 1.600 Foot Long Tin/Copper Plated Steel .094 Diameter Tin/Copper Plated Steel .250 Inch Mesh, 30 x 100 Foot Roll	258-0469-00	.700 ft	CR
	258-0469-02		DL
	258-0469-01		DL
	258-0481-00	.920 ft	CR
	251-0530-00	.005 si	CR

MISCELLANEOUS

Description	Part Number	Codes ^a	
		Cost	ST
Orametal Perfex, 40% Open, #22 Gauge (36 x 120) Strapping .023 x .750, Electro Galvanized	251-0516-00	.007 si	CS
	251-0590-00		OB

ROD, CONTINUOUS THREAD

Description	Part Number	Codes ^a	
		Cost	ST
6-32 Steel, Cadmium Plate .750-5 Acme LH .750-5 Acme LH	251-0971-00	.417 in	CS
	251-0912-00	.903 in	CR
	251-0556-00	.380 lb	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

STEEL

STEEL (006 NUMBERS) ANGLES

Description	Part Number	Codes ^a	
		Cost	ST
.125 x 1.000 x 1.000 x 240	006-2622-00		DL
.125 x 1.500 x 1.500 x 240	006-2623-00		DL
.125 x 2.000 x 2.000 x 240	006-2624-00		DL
.187 x 1.250 x 1.250 x 240	006-2626-00		DL
.187 x 1.500 x 1.500 x 240	006-2627-00		DL
.187 x 2.000 x 2.000 x 240	006-2628-00		DL
.250 x 1.000 x 1.000 x 240	006-2630-00		DL
.250 x 1.500 x 1.500 x 240	006-2631-00		DL
.250 x 2.500 x 2.500 x 240	006-2632-00		DL
.250 x 3.000 x 3.000 x 240	006-2633-00		DL

BAR

Description	Part Number	Codes ^a	
		Cost	ST
.125 x .750 x 240	006-2697-00		DL
.125 x 1.000 x 240	006-2634-00		DL
.125 x 2.000 x 240	006-2636-00		DL
.187 x 1.000 x 240	006-2637-00		DL
.250 x 1.000 x 240	006-2638-00		DL
.250 x 1.500 x 240	006-2639-00		DL
.250 x 2.000 x 240	006-2640-00		DL
.250 x 3.000 x 240	006-2641-00		DL
.375 x 3.000 x 240	006-2645-00		DL

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

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CATALOG WRITER: SANDRA PHILLIPS, 629-3030

INDUSTRY STANDARDS REFERENCE

ASTM A167	"Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet and Strip" - Contains chemical composition and mechanical property limits for annealed austenitic stainless steel grades (30000 series) in these product types. Does not specify dimensional tolerances.
ASTM A176	"Stainless and Heat Resisting Chromium Steel Plate, Sheet and Strip" - Contains chemical composition and mechanical property limits for annealed ferritic stainless steel grades (40000 series) in these product types. Does not specify dimensional tolerances.
ASTM A177	"High Strength Stainless and Heat Resisting Chromium-Nickel Steel Sheet and Strip" - Contains tensile strength and bend test requirements for higher strength tempers of austenitic stainless strip for grade S30100 only. Should not be applied to other alloys without special approval from the vendor. Does not specify dimensional tolerances.
ASTM A313	"Chromium-Nickel Stainless and Heat Resisting Steel Spring Wire" - Contains chemical composition, tensile strength and bend test requirements for several alloys of high strength stainless steel spring wire. Does not specify dimensional tolerances.
ASTM A480	"General Requirements for Flat Rolled Stainless and Heat Resisting Stainless Steel Plate, Sheet and Strip" - This is the master specification to control and select requirements such as dimensional tolerances, surface and edge finish, straightness, flatness, waviness, etc., for nearly all alloys of stainless steel in flat rolled products. Does not specify mechanical property limits.
ASTM A555	"General Requirements for Stainless and Heat Resisting Steel Wire" - Contains diameter and length tolerances for round, flat, or shaped stainless steel wire in all alloys. Does not specify mechanical property limits.
ASTM A581	"Free Machining Stainless and Heat Resisting Steel Wire" - Contains chemical composition and tensile strength limits for several free machining alloys and tempers of stainless steel wire.
ASTM A580	"Stainless and Heat Resisting Steel Wire" - Contains specifications for chemical composition and mechanical properties of all austenitic, ferritic, and martensitic alloys in several tempers. Does not specify dimensional tolerances.

WIRE

Size ^a	Type ^a	Specification	Condition ^a	Finish	Edge	Part Number	Codes ^b		
							Cost	ST	
.006 x .020	S30500	ASTM A580, A555 ^a	Condition A	2B	3	251-0761-00	.046 gr	CR	
.008 x .045	S30500		Condition A	2B	1	251-0746-00	.035 gr	CR	
.008 x .200	S30100		Spring	2	3	251-0687-00	18.000 lb	CS	
.010 x .025	S30500		Condition A	2B	1	251-0839-00	.252 oz	CR	
.010 x .125	S30500		Condition A	2B	3	251-0731-00	.923 oz	CR	
.010 x .125	S30200	ASTM A313, A555 ^a	Spring	2	3	251-0835-00		OB	
.010 x .250	S30500		Condition A	2B	4	251-0644-00	.188 oz	CR	
.010 x .500	S30500		Condition A	2B	3	251-0845-00	4.333 lb	CR	
.010 x .600	S30100	MIL-S-5059C	Full Hard	2	3	251-3036-00		DL	
.010 x 1.000	S30500		Condition A	2	3	251-0696-00	.010 in	CR	
.015 Diameter	S30400	ASTM A580, A555 ^a	Condition A			251-0927-00	.029 gr	CR	
.015 x .188	17-7 PH	AMS ^c 552B	Condition A	2D	3	251-0863-00	1.125 oz	CR	
.020 x .312	S30400	ASTM A580, A555 ^a	Condition A	Cold Drawn	Radius	251-0775-00	7.030 lb	CR	
.020 x .625	S30400	ASTM A580, A555 ^a	Condition A	Cold Drawn	Radius	251-0775-01	.189 oz	CR	
.025 Diameter	S30500	ASTM A580/581, A555 ^a	Condition A	Cold Drawn		251-0828-00	.321 oz	CR	
.025 x .2812	S30500		Rockwell Suprfl. 30N 50 MIN	2B	3	251-0694-00		OB	
.035 Diameter	S30200	ASTM A313, A555 ^a	Spring	Cold Drawn	3	251-0686-00	.211 oz	CR	
.062 Diameter	S30300	ASTM A581, A555 ^a	Condition B	Cold Drawn		251-0901-00	.047 in	CR	
.072 Diameter	17-7 PH	AMS ^c 5673 A				251-0727-00	4.160 lb	CS	
.072 Diameter	S30400	AMS ^c 580	One-quarter Hard			251-3085-00	42.030 lb	CR	
.080 Square	S30400	ASTM A580, A555 ^a	Condition A	Cold Drawn		251-0776-00		OB	
.081 Diameter	S30400	ASTM A580, A555 ^a	Half Hard	Cold Drawn		251-0855-00	.006 in	CR	
.093 Diameter	S30400	ASTM A580, A555 ^a	Half Hard	Cold Drawn		251-1814-00	.045 in	CR	
.0937 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground		251-0662-00	.015 in	CR	
.094 Diameter	17-4 PH		Condition A			251-3052-00	.019 in	CR	
.095 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground & Polished		251-0670-00	.031 in	CR	
.096 Diameter	17-4 PH	AMS ^c 5643		Centerless Ground		251-3103-00	.061 in	CR	
.100 x .120	S30400	ASTM A580, A555 ^a	Condition A	Cold Drawn		251-0771-00	.291 oz	CR	
.118 Diameter	S30200	ASTM A313, A555 ^a	Spring			251-0864-00	.007 in	CS	
.1247 Diameter	S30300	ASTM A581, A555 ^a	One-quarter Hard			251-0714-00	.064 in	CR	
.125 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Cold Drawn		251-0518-00	.012 in	CR	
.125 Diameter x .64	S43000	ASTM A580, A555 ^a	Condition A	Centerless Ground & Polished		251-0581-00	.009 in	CR	
.156 Diameter x .120	S30300	ASTM A581, A555 ^a	Condition A	Cold Drawn		251-0625-00	.020 in	CR	
.188 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground & Polished		251-0539-00	.036 in	CR	
.188 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground & Polished		251-0539-01		DL	
.188 Hex	S30300	ASTM A581, A555 ^a	Condition	Cold Drawn		251-0875-00	.036 in	CR	
.188 Hex	S41600	ASTM A581, A555 ^a	Condition A	Cold Drawn		251-0970-00	.026 in	CS	
.188 Square	S30300	ASTM A581, A555 ^a	Condition A			251-0973-00	.048 in	CS	
.219 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Cold Drawn		251-0751-00	.017 in	CR	
.249 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground & Polished		251-0640-00	.112 in	CR	
.250 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground		251-0538-00	.046 in	CR	
.250 Hex	S30300	ASTM A581, A484 ^a	Condition A			251-3049-00	.062 in	CR	
.250 Diameter	S30400	ASTM A581, A555 ^a	Condition A	Centerless Ground		251-0883-00	.034 in	CR	
.312 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground		251-0639-00	.050 in	CR	
.312 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground		251-0639-01	.164 in	CS	
.312 Square x 12 Feet	S30200	ASTM A580 ^a	Condition A	Cold Drawn		251-3068-00		NP	

^a The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

^b The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^c Aeronautical material specification.

STAINLESS STEEL

BAR

Size ^a	Type ^a	Specification	Condition ^a	Finish	Part Number	Codes ^b	
						Cost	ST
.109 x .800 x 144	S3020	ASTM A177, A480 ^a	Condition A	2B Finish Centerless Ground & Polished	251-3025-00	.130 in	CR
.109 x 4.000 x 52	S30200	ASTM A177, A480 ^a	Condition A	2B	251-3024-00	.177 in	CR
.125 x 1.000	17-4 PH	AMS ^c 5643	Condition A		251-0836-00		OB
.375 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground	251-0626-00	.088 in	CR
.375 Hex	S30300	ASTM A581, A555 ^a	Condition A	Cold Drawn	251-0708-00	.120 in	CR
.375 Diameter x 12 Feet	17-7 PM		Condition A		251-0810-00		OB
.375 Square	17-4 PH		Condition A		251-0825-00	1.418 lb	EN
.438 Diameter	S41600	ASTM A581, A555 ^a	Condition A	Cold Finished	251-0774-00	.159 in	CR
.438 Hex	S31600	ASTM A580, A555 ^a	Condition A	Cold Drawn	251-0700-00	5.177 lb	CR
.438 Hex	S30300	ASTM A581, A555 ^a	Condition A	Cold Drawn	251-0757-00	.221 in	CR
.500 Diameter x 120	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground & Polished	251-0542-00	.200 in	CR
.505 Diameter x 144	S30300	ASTM A582, A555 ^a	Condition A	Centerless Ground & Polished	251-3001-00	.158 in	CS
.562 Diameter	S430F		Condition A	Solenoid Quality	251-0793-00	3.260 lb	CR
.562 Diameter	S41600	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0631-00	.207 in	CR
.562 Diameter	S30300	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0701-00	.213 in	CR
.625 Diameter	S30300	ASTM A581, A555 ^a	Condition A	Centerless Ground & Polished	251-0598-00	.331 in	CR
.625 Hex	S30300	ASTM A582, A555 ^a	Condition A	Cold Drawn	251-0919-00	.285 in	CR
.750 Diameter	S30300	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0699-00	.369 in	CR
.875 Diameter	S30300	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0684-00		OB
1.000 Diameter	S30300	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0715-00	.454 in	CR
1.187 Diameter	S30300	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0750-00	.760 in	CR
1.500 Diameter	S30300	ASTM A582, A555 ^a	Condition A	Cold Finished	251-0742-00	2.200 lb	CS

FOIL

Size ^a	Type ^a	Specification ASTM ^a	Condition ^a	Finish	Edge	Part Number	Codes ^b	
							Cost	ST
.002 x .120	S30400	A167, A480	Condition H			251-0992-00	.068 gr	CR
.002 x 6.000 x 50	S30100/30200		Condition H	2B	3	251-0711-00	9.000 lb	CR
.002 x 6.000	S31603			2B		251-3031-00	23.250 lb	CR
.0025 ± .0005 x .266	S30100	A167, A480	Condition H	2B	3	251-0972-00		DL
.003 x .125	S30400	A167	Condition A	2B	A	251-3026-00	.030 gr	CR
.003 x .312	S30100	A176, A480	Full Hard	2	3	251-3019-04	6.793 lb	CR
.003 x .655	S30100	A176, A480	Full Hard	2	3	251-3019-02	8.030 lb	CR
.003 x .797	S30100	A176, A480	Full Hard	2	3	251-3019-05	1.520 lb	CR
.003 x .840	S30100	A176, A480	270 ksi	2B	1	251-0728-00	.063 ft	CR
.003 x 3.018	S30100	A167, A480	Full Hard	2	3	251-3019-00	5.600 lb	CR
.003 x 4.734	S30100	A167, A480	Full Hard	2	3	251-3019-01	6.8600 lb	CR
.003 x 6.000	S30100	A176, A480	Full Hard	2	3	251-3019-03	.406 oz	CR
.003 x 12.000 x 24.000	S31603	A167, A480	Condition A	2B		251-3032-00	8.260 lb	CR
.0035 x .045		A177				251-3077-00	.901 oz	CR
.004 x 2.750	S30500		Condition H	2B	3	251-0617-00	.198 oz	CR
.005 x .250	S30500		Condition A	2B	3	251-0904-00	.793 lb	CR
.005 x .375	S30500		Condition A	2B	3	251-0880-00	.335 oz	CR
.005 x 3.750	S43000	A176, A480		2B	3	251-0867-00	4.141 lb	CR
.005 x 6.000	S30200	A167, A480		2	3	251-0892-00	5.480 lb	CR
.006 x .312	S30100	A167, A555	Full Hard	2	3	251-3020-01	7.340 lb	CR
.006 x 1.093	S30100	A177, A555	Full Hard	2	3	251-3020-00	6.350 lb	CR

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^c Aeronautical material specification.

STRIP

Size ^a	Type ^a	Specification	Condition ^a	Finish	Edge	Part Number	Codes ^b		
							Cost	ST	
.0035 x 6.000	S31603	ASTM A167 ^a	Condition A			251-3105-00	.009 si	CR	
.004 x 6.000	S31603	ASTM A167 ^a	Condition A			251-3106-00	.019 si	CR	
.005 x 6.000	S30100	ASTM A177, A480 ^a	Half Hard	2	3	251-3096-00	.369 oz	CR	
.006 x 6.000	S30200	ASTM A167, A480 ^a	Condition H	2	3	251-3091-00	.011 si	CR	
.007 x .093	316L	ASTM A167, A480 ^a		2B	3	251-0832-00	.039 gr	CR	
.009 x 6.000	S30200	ASTM A167, A480 ^a	Condition H	2	3	251-0813-00	6.480 lb	CR	
.010 x .312	S30500		Condition A	2B	3	251-0719-00	.009 gr	CR	
.010 x .312	S30100	ASTM A167, A480 ^a	Condition A	2	3	251-0732-00		OB	
.010 x .590	S30200/ 30400	ASTM A167, A480 ^a		2	3	251-0772-00		DL	
.010 x .625	S30500		Condition A	2B	3	251-0578-00	2.613 lb	CR	
.010 x .750	S30500/ 30400	ASTM A167, A480 ^a		2B	3	251-0772-01		DL	
.010 x 1.000	S30500	ASTM A167 ^a	Condition H	2	3	251-0894-00	2.830 lb	CR	
.010 x 1.500	S30500		Condition A	2B	3	251-0579-00	.007 gr	CR	
.010 x 1.700	S30500		Condition A	2B	3	251-0766-00	2.780 lb	CR	
.010 x 1.750	S30500		Rockwell Superficial 15 N 75 Min	2B	3	251-0627-00		OB	
.010 x 2.000	S30500			2B		251-3079-00	.009 gr	CR	
.010 x 2.250	S30200		Rockwell Suprfl. 15N 75 Min	2B	3	251-0554-00	6.143 lb	CR	
.010 x 2.375	S30500		Condition A	2B	3	251-0656-00	.150 oz	OT	
.010 x 2.750	S30500					251-3078-00	3.240 lb	CR	
.010 x 3.625	S30500		Condition A	2B	3	251-0673-00	2.934 lb	CR	
.010 x 6.000	S30500		Condition A	2B	3	251-0706-00	3.155 lb	CR	
.010 x 12.000 x 22.000	S31603	ASTM A167, A480 ^a	Condition A	2	3	251-3083-00	.013 si	CR	
.010 x 12.000 x 22.000	S31603	ASTM A167, A480 ^a	One-quarter Hard	2	3	251-3095-00	.015 si	CR	
.012 x .750	S30100	ASTM A167, A480 ^a		2	5	251-0781-02		OB	
.012 x 6.000	S30100	ASTM A167, A480 ^a	Extra Hard Spring	2D	3	251-0781-01	.452 oz	CR	
.015 x .500	S43000	ASTM A176, A480 ^a		2	3	251-0507-00	3.738 lb	CR	
.016 x .040	S30500		Condition A	2B	1	251-0755-00	.020 gr	CR	
.016 x 1.875	17-7 PH	AMS ^c		2D	3	251-0796-00	6.520 lb	CR	
.017 x .250	S30500		Condition A	2B	3	251-0720-00	3.413 lb	CR	
.017 x .375	S30500		Condition A	2B	3	251-0847-00	2.710 lb	CR	
.017 x .500	S30500	ASTM A176 ^a	One-quarter Hard	2B	3	251-3056-00	.144 oz	CS	
.017 x .580	S30500		Condition A	2B	3	251-0843-00	.007 gr	CR	
.017 x .655	S30500		Condition A	2B	3	251-0862-00	2.320 lb	CR	
.017 x .750	S30500	ASTM A176, A480 ^a	Condition A	2B	3	251-3057-00	.138 oz	CS	
.017 x 1.625	S30500		Condition A	2B	3	251-0643-00	.197 oz	CR	
.017 x 2.000	S31600	ASTM A167 ^a	Condition A	2B	3	251-3065-00	2.470 lb	CR	
.017 x 2.000	S30500		Condition A	2B	2	251-0672-00	2.260 lb	CR	
.017 x 2.250	S31600	ASTM A167 ^a	One-quarter Hard	2	3	251-1725-00		DL	
.017 x 2.625	S30500		Condition A	2B	3	251-0721-00	2.967 lb	CR	
.017 x 2.625	S30500		One-quarter Hard	2B	3	251-0968-00	.005 gr	CR	
.017 x 3.250	S30500		Condition A	2B	3	251-0897-00	.005 gr	CR	
.017 x 2.250	S30500	ASTM A480 ^a	One-quarter Hard	2B	3	251-3062-00		NP	
.018 x .187	S30500	ASTM A167, A480 ^a		2B	3	251-0808-00	.017 gr	CR	
.018 x .625	S30100	ASTM A167, A480 ^a	One-quarter Hard	2	3	251-0729-01		OB	
.018 x 1.000	S30100	ASTM A167, A480 ^a	One-quarter Hard	2	5	251-0729-00	2.750 lb	CS	
.018 x 1.625	S30100	ASTM A167 ^a		2		251-0729-02	2.374 lb	EN	
.018 x 6.000	S30100	ASTM A167 ^a		2		251-0729-03	2.886 lb	CR	
.020 x .125	S30500		Condition A	2B	1	251-0569-00	.010 gr	CR	
.020 x .625	S30500	ASTM 167	Full Hard			251-3140-00	.033 lb	CR	
.020 x .322	17-7 PH	AMS ^c	Condition A		3	251-0987-00	.197 oz	CR	
.020 x 1.500	S30100	ASTM A167 ^a	Full Hard	2B		251-3089-00	.006 gr	CR	
.020 x 2.125	S30500		Condition A	2B	3	251-0844-00	4.010 lb	CR	
.020 x 9.000	17-7 PH	AMS ^c	Condition C (Cold Rolled)	2D	3	251-0809-00	2.752 lb	CR	
.025 x .125	S30500	ASTM A167 ^a		2B	3	251-0765-00	5.358 lb	CS	
.025 x .125	S30500	ASTM A167, A480 ^a	Condition A	2B		251-0999-00	6.585 lb	CR	
.025 x .200	S30500		Condition A	2B	3	251-0906-00	4.488 lb	CR	
.025 x .250	S30100/ 30200	ASTM A167, A480 ^a		2B	3	251-0624-00	.339 in	CR	
.025 x .250	S30500		Rockwell Suprfl. 30N 50 Min	2B	3	251-0635-00	.357 oz	CR	
.025 x .295	S30500	ASTM A167, A480 ^a	Cold Rolled	2B	3	251-0993-00	6.363 lb	CR	
.025 x .400	S30500	ASTM A167, A480 ^a	Condition A	2B	3	251-3006-00	3.190 lb	CS	
.025 x .500	S30500		Condition A			251-0917-00	2.433 lb	CR	
.025 x .810	S30500	ASTM A167, A480 ^a				251-3003-00	2.180 lb	CS	

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^c Aeronautical material specification.

STRIP (cont)

Size ^a	Type ^a	Specification ASTM ^a	Condition ^a	Finish	Edge	Part Number	Codes ^b	
							Cost	ST
.025 x 1.000	S30500	A167, A480 ^b	Condition A	2B	3	251-3060-00		NP
.025 x 1.000	S30500		Condition A	2B	3	251-0603-00	3.300 lb	CR
.025 x 1.375	S30500		Condition A	2B	3	251-0604-00	2.070 lb	CR
.025 x 1.500	S30500		Condition A	2B	3	251-0571-00	.008 gr	CR
.025 x 1.750	S30500		Rockwell Suprfl, 30 N 15 Min	2B	3	251-0629-00		OB
.025 x 1.750	S30500	A167, A480	Condition A	2B	3	251-0572-00	3.770 lb	CR
.025 x 1.875	S30500		Condition A	2B	3	251-0573-00	1.743 lb	CR
.025 x 2.000	S30500		Condition A	2B		251-0995-00	2.500 lb	CR
.025 x 2.250	S30500		Condition A	2B	3	251-0574-00	3.825 lb	CR
.025 x 2.625	S30500		Condition A	2B	3	251-0660-00	.008 gr	CR
.025 x 2.625	S30500	A167, A480	Rockwell Suprfl, 30N 45-50	2B	3	251-0663-00	.007 gr	CR
.025 x 2.750	S30500		Rockwell Superficial 30N 5 Min	2B	3	251-0634-00	1.835 lb	CR
.025 x 3.375	S30100		One-half Hard	2D	3	251-0709-00	.168 in	OT
.025 x 3.375	S30500		Rockwell Superficial 30N 50 Min	2B	3	251-0567-00	3.533 lb	CR
.025 x 3.500	S30500		Condition A	2B	3	251-0818-00	3.138 lb	OT
.025 x 4.000	S30500	A167, A480	One-half Hard	2B	3	251-0773-00	2.494 lb	CR
.025 x 6.250	S30500		Condition A	2B	3	251-0764-00	.007 gr	CR
.025 x 11.000 x 30.000	S30500		Cold Rolled	2D	3	251-0517-00	2.705 lb	CR
.025 x 12.000 x 22.000	S30500		Condition A	2B		251-0517-01	.024 si	CR
.030 Square	S30500					251-0747-00	.021 gr	CR
.031 x .750	S30500	A167, A480	Condition A	2B	3	251-0568-00	1.395 lb	CR
.031 x .750	S30100		Spring	2	3	251-0688-00	14.000 lb	CR
.031 x 1.000	S30500		Condition A	2B		251-0991-00	2.150 lb	CR
.031 x 1.000	S30200/30400		Condition A	2B	3	251-0960-00	.114 oz	CR
.031 x 1.750	S30500		Condition A	2B	3	251-0628-00	3.053 lb	CR
.031 x 2.250	S30500	A167, A480	Condition A	2B	3	251-0577-00	3.423 lb	CR
.031 x 2.875	S30500		Condition A	2B	3	251-0615-00		OB
.031 x 3.250	S30500		Condition A	2B	3	251-0616-00		OB
.038 x 1.250	S30400		Condition A	2B	1	251-0797-02	.419 oz	CR
.038 x 3.000	S30400	A167, A480	Condition A	2B	1	251-0797-01		DL
.040 Diameter	S30500		Condition A	Cold Drawn		251-0657-00	.010 gr	CR
.050 Diameter	17-7 PH	A167, A480	Condition A			251-0730-00	.367 in	CR
.050 x 3.000	S30100		One-quarter Hard	2B	3	251-0718-01	9.576 lb	OT
.060 Diameter	S30500		Condition A	Cold Drawn		251-0649-00		DL
.062 x .850	S30200	A167, A480 430	Condition B			251-0563-02	.053 in	CR
.115 x 4.500 x 120			Annealed			251-0849-00	1.320 lb	CR
.125 x .625 x 144	S30200/30400		One-quarter Hard	2		251-0890-00	.080 in	CR
.150 x .625	S30200/30400	167/176, A480	One-quarter Hard	2		251-0890-02	3.100 in	CR
.150 x .675	S30200/30400	167/176, A480				251-0890-03	.106 in	CR
.155 Diameter	S43000F		Condition A	Solenoid Quality		251-0792-00	20.650 lb	CR

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SHEET

Size ^a	Type ^a	Specification ASTM ^a	Condition ^a	Finish	Part Number	Codes ^b	
						Cost	ST
.017 x 22.750	S30500	A167, A480	Condition A	2B	251-0923-00		DL
.018 x 36 x 120	S30200/30400	A167, A480	Condition A	2B	251-0531-00	1.590 lb	CR
.020 x 36 x 120	S30100	A177, A480	Condition H	2B	251-0801-00	2.297 lb	CR
.025 x 36 x 120	S30100	A177, A480	One-half Hard	2B	251-0624-01	.029 si	CR
.025 x 36 x 96	S30100	A177, A480	One-quarter Hard	2B	251-0802-00	.018 si	CR
.025 x 23.938	S30500	A167, A480	Condition A	2B	251-0922-00	1.115 lb	CR
.025 x 36 x 120	17-7 PH	A694-74	Condition A	2D	251-0788-00	.066 si	CR
.031 x 36 x 120	S30200/30400	A167, A480	Condition A	2B	251-0501-00	.019 si	CR
.031	S30200/30400	A167	Condition A	2B	251-0501-01	.036 si	OT
.032 x 36 x 120	17-7 PH	A693-74	Condition A	2D	251-0984-00	.065 si	CR
.038 x 36 x 96	S30400	A167, A480	Condition A	2B	251-0797-00	.015 si	CR
.038 x 36 x 120	S30100	A167, A480	One-half Hard	4	251-0562-00	.037 si	CR
.050 x 36 x 120	S30100	A167, A480	One-quarter Hard	2D	251-0718-00	.036 si	CR
.050 x 36 x 120	S30400	A167, A480	Condition A	2B	251-0704-00	.020 si	CR
.062 x 36 x 120	S30200	A167, A480	One-half Hard	2D	251-0563-00	.037 si	CR
.062 x 48 x 120	S30200	A167, A480	Condition A	2B	251-0798-00	.034 si	CR
.090 x 30 x 120	S30100	A167, A480	One-quarter Hard	2B	251-0805-00	.097 si	CR
.109 x 36 x 120	S30200	A167, A480	One-quarter Hard	2B	251-0763-00		OB

TUBE

Size ^a	Type ^a	Specification	Condition ^a	Other	Part Number	Codes ^b	
						Cost	ST
.093 OD x .008 Wall	S32100	MIL-T-8808A	Condition H		251-0733-00		DL
.125 OD x .016 Wall	S30400				251-0790-00		DL
.125 OD x .016 Wall	S30400	ASTM A511 ^a	Condition H	Cold Drawn, Seamless	251-0790-01	.108 in	CR
.125 OD x .016 Wall	S30400	ASTM A511 ^a	Condition H	Cold Drawn, Seamless	251-0790-02	.078 in	CR
.1243 OD x .016 Wall	S30400	ASTM A511 ^a	Condition H	Cold Drawn, Seamless	251-0790-03	.121 in	CS
.156 OD x .144 ID	S32100	MIL-T-8808A	Condition A		251-0789-00		OB
.189 x .007 Wall	S30200/30400	ASTM A269 ^a	One-half Hard		251-0674-00		OB
.240 OD x .158 ID	S30300	Vendor	Condition A		251-0652-00	.414 in	CR
.375 OD x .042 Wall	S30400	ASTM A269 ^a	Condition A	Welded & Drawn	251-0762-00		OB
.498 OD x .397 ID	S30400	ASTM A269 ^a	Condition A	64 μ in Finish	251-0695-00	.252 in	CR
.625 OD x .495 ID	S30400	ASTM A269 ^a	Condition A	Welded & Drawn	251-0827-00	6.120 ft	CR
1.000 OD x .976 ID	S30500	Vendor	Condition A	Welded & Drawn	251-0611-00		OB
1.105 ID x .010 Wall	S30500	Vendor	Condition A	Welded	251-0918-00	5.460 ft	CR
1.495 ID x .010 Wall	S30500	Vendor	Condition A	Welded & Bead Rolled	251-0830-00	3.200 ft	CR
1.500 OD x .049 Wall	S30400	ASTM A554 ^a	Condition A	180 Grit Brushed Finish	251-0743-00		OB
1.980 ID x .010 Wall	S30500	ASTM A554 ^a	Condition A	Welded & Bead Rolled	251-0893-00	12.280 ft	CR

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WIRE CLOTH

Description	Part Number	Codes ^a	
		Cost	ST
14 x 14 Mesh, .018 Diameter Wire, 3.6 x 3.9	251-3076-00		NP
40 x 40 Mesh, .003 Diameter Wire x 12 Inches Wide	251-3081-00	.008 si	CR
105 x 105 Mesh, .003 Diameter Wire 18 x 28	251-0824-00	14.560 sh	CR
105 x 105 Mesh, .003 Diameter Wire 18 x 27, Satin Chrome Coat	251-0824-01	24.016 ea	CR
200 x 200 Mesh, 7 x 7 .002 Thick, 1/4 Hard, Type 304	251-3048-00	2.540 ea	CR
200 x 200 Mesh, .0021 x 18.5 wide, Type 304, One-quarter Hard	251-0689-00	.046 si	CR
200 x 200 Mesh, .0021 x 18 with black Chromate Coat, Type 301, One-quarter Hard	251-0689-01	34.296 ea	CR
7.5 x 7.5 x .018 Thick Mesh, Electroformed, Bright Annealed (MANDREL)	006-3589-00	1.270 ea	CR

CONTINUOUS THREAD ROD (ASTM A581, ALLOY S30300^b)

Description	Part Number	Codes ^a	
		Cost	ST
4-40 UNC-2A	251-0744-00	.073 in	CR
10-32, UNF-2A	251-0873-00		OB
4-40 UNC-2A (Alloy S30400)	251-0978-00	.900 ea	CS
4.375-20 UNF-2A x 72.000 Long	251-3145-00	.349 in	CR

^a The nominal price (at time of printing) is listed in the cost column. For Status Codes, see tab marked CODES in the back of this catalog.

^b The mechanical properties and tolerances can be found in the specified ASTM; segments of the listed ASTM can be found in Section 16 of this catalog. The full text of these ASTMs are available for review at 38-314 (Metallurgical Lab).

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SEGMENTS FROM ASTM B209^a

ALUMINUM ALLOY

SHEET AND PLATE

MECHANICAL PROPERTIES & TOLERANCES

Alloy	Temper	Thickness (Inch)	Tensile Strength (psi)	Yield Strength (.2% Offset)(psi)	Elongation %
2024	T3	.008 - .009	63,000 Minimum	42,000 Minimum	10
		.010 - .020	63,000 Minimum	42,000 Minimum	12
		.021 - .249	64,000 Minimum	42,000 Minimum	15
3003	H14	.009 - .012	19,000 - 25,000	16,000 Minimum	1
		.013 - .019	19,000 - 25,000	16,000 Minimum	2
		.020 - .031	19,000 - 25,000	16,000 Minimum	3
		.032 - .050	19,000 - 25,000	16,000 Minimum	4
		.051 - .113	19,000 - 25,000	16,000 Minimum	5
		.114 - .161	19,000 - 25,000	16,000 Minimum	6
		.162 - .249	19,000 - 25,000	16,000 Minimum	7
		.250 - .499	19,000 - 25,000	16,000 Minimum	8
		.500 - 1.000	19,000 - 25,000	16,000 Minimum	10
5005	O	.006 - .007	15,000 - 21,000	5,000 Minimum	12
		.008 - .012	15,000 - 21,000	5,000 Minimum	14
		.013 - .019	15,000 - 21,000	5,000 Minimum	16
		.020 - .031	15,000 - 21,000	5,000 Minimum	18
		.032 - .050	15,000 - 21,000	5,000 Minimum	20
		.051 - .113	15,000 - 21,000	5,000 Minimum	21
		.114 - .249	15,000 - 21,000	5,000 Minimum	22
		.250 - 3.000	15,000 - 21,000	5,000 Minimum	22
5005	H14	.009 - .031	21,000 - 27,000	17,000 Minimum	1
		.032 - .050	21,000 - 27,000	17,000 Minimum	2
		.051 - .113	21,000 - 27,000	17,000 Minimum	3
		.114 - .161	21,000 - 27,000	17,000 Minimum	5
		.162 - .249	21,000 - 27,000	17,000 Minimum	6
		.250 - .499	21,000 - 27,000	17,000 Minimum	8
		.500 - 1.000	21,000 - 27,000	17,000 Minimum	10
5005	H32	.017 - .019	17,000 - 23,000	12,000 Minimum	3
		.020 - .031	17,000 - 23,000	12,000 Minimum	4
		.032 - .050	17,000 - 23,000	12,000 Minimum	5
		.051 - .113	17,000 - 23,000	12,000 Minimum	7
		.114 - .161	17,000 - 23,000	12,000 Minimum	8
		.162 - .249	17,000 - 23,000	12,000 Minimum	9
		.250 - 2.000	17,000 - 23,000	12,000 Minimum	10
5005	H34	.009 - .012	20,000 - 26,000	15,000 Minimum	2
		.013 - .031	20,000 - 26,000	15,000 Minimum	3
		.032 - .050	20,000 - 26,000	15,000 Minimum	4
		.051 - .113	20,000 - 26,000	15,000 Minimum	5
		.114 - .161	20,000 - 26,000	15,000 Minimum	6
		.162 - .249	20,000 - 26,000	15,000 Minimum	7
		.250 - .499	20,000 - 26,000	15,000 Minimum	8
		.500 - 2.000	20,000 - 26,000	15,000 Minimum	10
5005	H134 ^b	.017 - .019	18,000 - 24,000	14,000 Minimum	2
		.020 - .031	18,000 - 24,000	14,000 Minimum	3
		.032 - .050	18,000 - 24,000	14,000 Minimum	4
		.051 - .113	18,000 - 24,000	14,000 Minimum	6
		.114 - .161	18,000 - 24,000	14,000 Minimum	7
		.162 - .249	18,000 - 24,000	14,000 Minimum	8
		.250 - .499	18,000 - 24,000	14,000 Minimum	9
		.500 - 2.000	18,000 - 24,000	14,000 Minimum	10
5052	H32	.017 - .019	31,000 - 38,000	23,000 Minimum	4
		.020 - .050	31,000 - 38,000	23,000 Minimum	5
		.051 - .113	31,000 - 38,000	23,000 Minimum	7
		.114 - .249	31,000 - 38,000	23,000 Minimum	9
		.250 - .499	31,000 - 38,000	23,000 Minimum	11
		.500 - 2.000	31,000 - 38,000	23,000 Minimum	12
5052	H34	.009 - .019	34,000 - 41,000	26,000 Minimum	3
		.020 - .050	34,000 - 41,000	26,000 Minimum	4
		.051 - .113	34,000 - 41,000	26,000 Minimum	6
		.114 - .249	34,000 - 41,000	26,000 Minimum	7
		.250 - 1.000	34,000 - 41,000	26,000 Minimum	10
5657	H25	.030 - .090	20,000 - 28,000		8
6061	T6	.006 - .007	42,000 Minimum	35,000 Minimum	4
		.008 - .009	42,000 Minimum	35,000 Minimum	6
		.010 - .020	42,000 Minimum	35,000 Minimum	8
		.021 - .249	42,000 Minimum	35,000 Minimum	10
7075	T6	.008 - .011	74,000 Minimum	63,000 Minimum	5
		.012 - .039	76,000 Minimum	67,000 Minimum	7
		.040 - .125	78,000 Minimum	68,000 Minimum	8
		.126 - .249	78,000 Minimum	69,000 Minimum	8

TABLES OF ANSI H35.2^c

Table No.	Title
3.1	Thickness
3.2	Thickness
3.3	Width, Sheared Flat Sheet and Plate
3.4	Width and Length, Sawed Flat Sheet and Plate
3.5	Length, Sheared Flat Sheet and Plate
3.6	Width, Slit Coiled Sheet
3.7	Lateral Bow, Coiled Sheet
3.8	Lateral Bow, Flat Sheet and Plate
3.9	Squareness, Flat Sheet and Plate
3.10	Diameter, Sheared or Blanked Sheet & Plate Circles
3.11	Diameter, Sawed Sheet & Plate Circles
3.12	Flatness, Flat Sheet
3.13	Flatness, Sawed or Sheared Plate

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.^b 5005 H134 is made from 5005 H12. The mechanical properties given are for 5005 H12. Cold-working to produce patterns will alter the properties to some degree.^c The actual tables for the Table numbers referenced above can be found in the ANSI H35.2 portion of this section.

SEGMENTS FROM ASTM B209 (cont)

ALUMINUM ALLOY

SHEET AND PLATE

RECOMMENDED MINIMUM BEND RADII FOR 90° COLD FORMING

Alloy	Temper	Radii for Various Thicknesses Expressed in Terms of Thickness ^T							
		.0156 Inch	.0313 Inch	.0625 Inch	.125 Inch	.1875 Inch	.250 Inch	.375 Inch	.500 Inch
2024	T4	2.500 T	3.000 T	4.000 T	5.000 T	5.000 T	6.000 T	7.000 T	7.500 T
3003	H14	9.000	9.000	9.000	1.000 T	1.000 T	1.500 T	2.000 T	2.500 T
5005	O	0	0	0	0	.500 T	1.000 T	1.000 T	1.500 T
5005	H14	0	0	0	1.000 T	1.500 T	1.500 T	2.000 T	2.500 T
5005	H32	0	0	0	.500 T	1.000 T	1.000 T	1.500 T	2.000 T
5005	H34	0	0	0	1.000 T	1.500 T	1.500 T	2.000 T	2.500 T
5052	H32	0	0	1.000 T	1.500 T	1.500 T	1.500 T	1.500 T	2.000 T
5052	H34	0	1.000 T	1.500 T	2.000 T	2.000 T	2.500 T	2.500 T	3.000 T
5657	H25	0	0	0	1.000 T				
6061	T6	1.000 T	1.000 T	1.500 T	2.500 T	3.000 T	3.500 T	4.500 T	5.000 T
7075	T6	3.000 T	4.000 T	5.000 T	6.000 T	6.000 T	8.000 T	9.000 T	9.500 T

NOTES:

The radii listed are the minimum recommended for bending sheets and plates without fracturing in a standard press brake with air bend dies. Other types of bending operations may require larger radii or permit smaller radii. The minimum permissible radii will also vary with the design and condition of the tooling.

Alclad sheet in the heat-treatable alloys can be bent over slightly smaller radii than the corresponding tempers of the bare alloy.

Heat-treatable alloys can be formed over appreciably smaller radii immediately after solution heat treatment.

The H112 Temper (applicable to non-heat treatable alloys) is supplied in the as-fabricated condition without special property control but usually can be formed over radii applicable to the H14 (or H34) temper or smaller.

SEGMENTS FROM ASTM B210^a

ALUMINUM ALLOY

DRAWN SEAMLESS TUBES

MECHANICAL PROPERTIES & TOLERANCES

Alloy	Temper	Wall Thickness	Tensile Strength ksi ^b (Min)	Yield Strength (.2% Offset) ksi ^b (Min)	Elongation in 2 in or 4 x Full-section Specimen, Min
2024	T3	.018 - .024	64	42	10
		.025 - .049	64	42	12
		.050 - .500	64	42	14
		.260 - .500	64	42	16
3003	H16	.010 - .024	24	21	
		.025 - .049	24	21	3
		.050 - .259	24	21	5
		.260 - .500	24	21	
6061	T6	.025 - .049	42	35	10
		.050 - .259	42	35	12
		.260 - .500	42	35	14
7075	T6	.025 - .259	77	66	8
		.260 - .500	77	66	9

TABLES OF ANSI H35.2^c

Table No.	Title
11.1	Diameter, Round Tube
11.2	Width and Depth, Square, Rectangular, Hexagonal and Octagonal Tube
11.3	Diameter, Oval, Elliptical, and Streamline Tube
11.4	Corner Radii
11.5	Wall Thickness, Round and Other-than-Round Tube
11.6	Straightness
11.7	Twist
11.8	Length
11.9	Flatness (Flat Surfaces) Other-than-Round Tube
11.10	Squareness of Cut Ends
11.11	Angularity
11.12	Surface Roughness
11.13	Dents

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c The actual tables for the Table numbers referenced above can be found in the ANSI H35.2 portion of this section.

SEGMENTS FROM ASTM B211^a

ALUMINUM

DRAWN BAR, ROD AND WIRE

MECHANICAL PROPERTIES & TOLERANCES^b

Alloy ^c	Temper ^c	Distance Across Flats	Tensile Strength ksi ^d (Min)	Yield Strength ksi ^d (Min)	Elongation in 2 in or 4 x Distance Across Flats, (%), Min ^e
2011	T3	.125 - 1.500	45	38	10
		1.501 - 2.000	43	34	12
		2.001 - 3.250	42	30	14
2024	T4	.124 & Under	62		
		.125 - .499	62	45	10
		.500 - 4.500	62	42	10
		4.501 - 6.500	62	40	10
		6.501 - 8.000	58	38	10
2024	T351 ^f	.500 - 6.500	62	45	10
5052	H34	.374 & Under	34	26	
5056	H14	.374 & Under	52		
6061	T6	.124 & Under	42		
		.125 - 8.000	42	35	10
6262	T6	.125 - 8.000	42	35	10
6262	T9	.125 - 2.000	52	48	5
		2.001 - 3.000	50	46	5
7075	T6	.124 & Under	77		
		.125 - 4.000	77	66	7

TABLES OF ANSI H35.2^g

Table No.	Title
9.1	Diameter, Round Wire and Rod
9.2	Diameter, Centerless Ground Round Wire & Rod
9.3	Diameter, Rivet & Cold Heading Wire & Rod
9.4	Diameter, Redraw Rod
9.5	Thickness and Width, Rectangular Wire and Bar
9.6	Distance Across Flats, Square, Hexagonal and Octagonal Wire and Bar
9.7	Thickness and Width, Flattened and Slit Wire
9.8	Thickness and Width, Flattened and Slit Wire
9.9	Thickness and Width, Rough Rolled Round Cornered Square and Rectangular Bar
9.10	Length, Specific and Multiple
9.11	Twist, Bar in Straight Lengths
9.12	Straightness, Rod and Bar in Straight Lengths
9.13	Straightness, Screw Machine Stock
9.14	Flatness (Flat Surfaces)
9.15	Angularity
9.16	Squareness of Saw Cuts

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b To determine conformance to this specification, each value shall be rounded in accordance with the rounding method of Recommended Practice E29.

^c These alloy and temper designations were established in accordance with ANSI H35.1.

^d ksi = 1000 psi.

^e The measurement of elongation is not required for wire less than 0.125 inches in thickness or diameter.

^f For stress-relieved tempers, characteristics and properties other than those specified may differ somewhat from the corresponding characteristics and properties of material in the basic tempers.

^g The actual tables for the Table numbers referenced above can be found in the ANSI H35.2 portion of this section.

SEGMENTS FROM ASTM B221^a

ALUMINUM-ALLOY

EXTRUDED BAR, ROD, WIRE, SHAPE, AND TUBE

MECHANICAL PROPERTY LIMITS^b

Alloy & Temper	Specified Section or Wall Thickness, Inch	Area, Inch ²	Tensile Strength, Min ksi	Yield Strength (0.2% Offset), Min ksi	Elongation in 2 Inch or 4 x Diameter, Min % ^{c,d}
2024 ^e					
T3	Up thru .249	All	57.	42.	12. ^f
T3510 ^g	.250 - .749	All	60.	44.	12. ^f
T3511 ^g	.750 - 1.499	All	65.	46.	10.
	1.500 and over	Up thru 25.	70.	52. ^h	10.
		Over 25. thru 32.	68.	48. ⁱ	8.
6061 ^e					
T6, T62 ^j	Up thru .249	All	38.	35.	8.
T6510 ^g	.250 and over	All	38.	35.	10.
6063					
T4, T42 ^j	Up thru .500	All	19.	10.	14.
	.501 - 1.000	All	18.	9.	14.
T5	Up thru .500	All	22.	16.	8.
	.501 - 1.000	All	21.	15.	8.
T52	Up thru 1.000	All	22.	16.	8.
T6	Up thru .124	All	30.	25.	8.
	.125 - 1.000	All	30.	25.	10.
7075 ^e					
T6, T62 ^j	Up thru .249	All	78.	70.	7.
T6510 ^g	.250 - .499	All	81.	73.	7.
T6511 ^g	.500 - 1.499	All	81.	72.	7.
	1.500 - 2.999	All	81.	72.	7.
	3.000 - 4.999	Up thru 20.	81.	71.	7.
		Over 20. thru 32.	78.	70.	6.
	4.500 - 5.000	Up thru 32.	78.	68.	6.

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information call 627-7259.

^b To determine conformance to this specification, each value shall be rounded in accordance with the rounding method of Recommended Practice E29.

^c Elongation of full-section and cut-out sheet-type specimens in 2 inches of cut-put round specimens, in 4 x specimen diameter.

^d For material of such dimensions that a standard test specimen cannot be taken, or for shapes thinner than .062 inches the test for elongation is not required.

^e These alloys are also produced in the F temper for which no tensile properties are specified or guaranteed.

^f Minimum elongation for tube, 10%

^g For stress relieved tempers (T3510, T3511, T4510, T4511, T6510, T6511, T73510, T73511, T76510, T76511, T8510, T8511), characteristics and properties other than those specified may differ somewhat from the corresponding characteristics and properties of material in the basis tempers.

^h Minimum yield strength for tube, 48. ksi.

ⁱ Minimum yield strength for tube, 46. ksi.

^j Material in the T42 and T62 Tempers is not available from the material producers.

SEGMENTS FROM ASTM B221 (cont)

ALUMINUM-ALLOY

EXTRUDED BAR, ROD, WIRE, SHAPE, AND TUBE

INDEX TO TABLES OF PERMISSIBLE VARIATIONS OF ANSI H35.2^a

Table Number	Title
10.1	Cross-Sectional Dimensions: Wire, Rod, Bar & Shapes Except for Shapes in T3510, T4510, T6510, T73510, T76510 and T8510 Tempers
10.2	Length: Wire, Rod, Bar and Shapes
10.3	Straightness: Rod, Bar and Shapes
10.4	Twist: Bar and Shapes
10.5	Flatness: Flat Surfaces
10.6	Flatness: Flat Surfaces, Hollow Shapes Except for 0, T3510, T4510, T6510, T73510, T76510 and T8510 Tempers
10.7	Surface Roughness: Wire, Rod, Bar and Shapes
10.8	Contour (Curved Surfaces): Shapes Except for 0, T3510, T4510, T6510, T73510, T76510 and T8510 Tempers
10.9	Squareness of Cut Ends: Wire, Rod, Bar and Shapes
10.10	Corner and Fillet Radii: Bar and Shapes
10.11	Angularity: Bar and Shapes Except for 0, T3510, T4510, T6510, T73510, T76510 and T8510 Tempers
12.1	Diameter Round Tube Except for T3510, T4510, T6510, T73510, T76510 and T8510 Tempers
12.2	Width and Depth: Square, Rectangular, Hexagonal, Octagonal Tube Except for T3510, T4510, T6510, T73510, T76510 and T8510 Tempers
12.3	Wall Thickness: Round Tube
12.4	Wall Thickness: Other Than Round Tube
12.5	Length Extruded Tube
12.6	Twist: Other Than Round Tube
12.7	Straightness: Tube in Straight Lengths
12.8	Flatness: Flat Surfaces
12.9	Squareness of Cut Ends: Extruded Tube
12.10	Corner and Fillet Radii: Tube Other Than Round
12.11	Angularity: Tube Other Than Round
12.12	Surface Roughness: Extruded Tube
12.13	Dents: Extruded Tube

^a The actual tables for the Table Numbers referenced above can be found in the ANSI H35.2 portion of this Section.

SEGMENTS FROM ASTM B373^a
ALUMINUM
FOIL FOR CAPACITORS
DIMENSIONAL TOLERANCES

The foil width shall not vary from that specified on the purchase order by more than $\pm .016$ inch for widths under 12 inch, $\pm .031$ inch for width 12 inches and over.

Tensile Breaking Load	
Nominal Thickness	Breaking Load, Min. lbf/in of Width
.00017	1.1
.00020	1.3
.00023	1.5
.00025	1.6
.00030	1.9
.00035	2.3
.00040	2.6
.00045	2.9
.00050	3.2

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

ANSI H35.2

SECTION 3. SHEET AND PLATE

Table 3.1 • THICKNESS^a

Alloys 2014, 2024, 2124, 2219, 3004, 5052, 5083, 5086, 5154, 5252, 5254, 5454, 5456, 5652, 6061, 7039, 7075, 7079, 7178, and brazing sheet numbers: 11, 12, 21, 22, 23 and 24.

NOTE: ALSO APPLICABLE TO THE ALLOYS LISTED WHEN SUPPLIED AS ALCLAD.

Specified Thickness Inch	Specified Width -- Inch														
	Up thru 18	Over 18 thru 36	Over 36 thru 48	Over 48 thru 54	Over 54 thru 60	Over 60 thru 66	Over 66 thru 72	Over 72 thru 78	Over 78 thru 84	Over 84 thru 90	Over 90 thru 96	Over 96 thru 132	Over 132 thru 144	Over 144 thru 156	Over 156 thru 158
	Tolerance -- Inch Plus and Minus														
.006 - .010	.001	.0015	.0025	.0025											
.011 - .017	.0015	.0015	.0025	.0035											
.018 - .028	.0015	.002	.0025	.0035	.004	.004	.004								
.029 - .036	.002	.002	.0025	.004	.005	.005	.005	.006	.006	.007	.009				
.037 - .045	.002	.0025	.003	.004	.005	.005	.005	.006	.006	.007	.011				
.046 - .068	.0025	.003	.004	.005	.006	.006	.006	.007	.007	.008	.012	.013			
.069 - .076	.003	.003	.004	.005	.006	.006	.006	.007	.007	.012	.012	.016			
.077 - .096	.0035	.0035	.004	.005	.006	.006	.006	.007	.007	.012	.012	.016			
.097 - .108	.004	.004	.005	.005	.007	.007	.007	.008	.008	.016	.018	.020			
.109 - .125	.0045	.0045	.005	.005	.007	.007	.007	.008	.008	.016	.018	.020			
.126 - .140	.0045	.0045	.005	.005	.007	.010	.012	.013	.014	.016	.018	.020			
.141 - .172	.006	.006	.008	.008	.009	.012	.014	.015	.016	.017	.019	.023			
.173 - .203	.007	.007	.010	.010	.011	.014	.016	.017	.017	.017	.022	.026			
.204 - .249	.009	.009	.011	.011	.013	.016	.018	.018	.018	.018	.024	.028			
.250 - .320	.013	.013	.013	.013	.015	.018	.020	.020	.020	.020	.025	.030	.035	.042	.053
.321 - .438	.019	.019	.019	.019	.020	.020	.023	.023	.025	.025	.026	.033	.038	.045	.057
.439 - .625	.025	.025	.025	.025	.025	.025	.025	.030	.030	.030	.035	.035	.043	.049	.067
.626 - .875	.030	.030	.030	.030	.030	.030	.030	.037	.037	.037	.045	.045	.054	.059	.077
.876 - 1.125	.035	.035	.035	.035	.035	.035	.035	.045	.045	.045	.055	.055	.065	.070	.088
1.126 - 1.375	.040	.040	.040	.040	.040	.040	.040	.052	.052	.052	.065	.065	.075	.080	.098
1.376 - 1.625	.045	.045	.045	.045	.045	.045	.045	.060	.060	.060	.075	.075	.085	.090	.108
1.626 - 1.875	.052	.052	.052	.052	.052	.052	.052	.070	.070	.070	.088	.088			
1.876 - 2.250	.060	.060	.060	.060	.060	.060	.060	.080	.080	.080	.100	.100			
2.251 - 2.750	.075	.075	.075	.075	.075	.075	.075	.100	.100	.100	.125	.125			
2.751 - 3.000	.090	.090	.090	.090	.090	.090	.090	.120	.120	.120	.150	.150			
3.001 - 4.000	.110	.110	.110	.110	.110	.110	.110	.140	.140	.140	.160	.160			
4.001 - 5.000	.125	.125	.125	.125	.125	.125	.125	.150	.150	.150	.160	.160			
5.001 - 6.000	.135	.135	.135	.135	.135	.135	.135	.160	.160	.160	.170	.170			

^a When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

ANSI H35.2 (cont)

SECTION 3. SHEET AND PLATE (cont)

Table 3.2 • THICKNESS^a

Alloys EC, 1060, 1100, 3003, 3005, 3105, 5005, 5050, 5357, 5457, 5657, 100 Reflector Sheet, Clad 1100 Reflector Sheet and Clad 3003 Reflector Sheet.

Note: ALSO APPLICABLE TO THE ALLOYS LISTED WHEN SUPPLIED AS ALCLAD.

Specified Thickness Inch	Specified Width -- Inch									
	Up thru 18	Over 18 thru 36	Over 36 thru 54	Over 54 thru 72	Over 72 thru 90	Over 90 thru 102	Over 102 thru 132	Over 132 thru 144	Over 144 thru 156	Over 156 thru 168
	Tolerance -- Inch Plus and Minus									
.006 - .007 .008 - .010 .011 - .017 .018 - .028 .029 - .036	.001 .001 .0015 .0015 .002	.001 .0015 .0015 .002 .002	.002 .002 .002 .0025 .0025							
.037 - .045 .046 - .068 .069 - .076 .077 - .096 .097 - .108	.002 .0025 .0025 .003 .0035	.0025 .003 .003 .003 .004	.003 .004 .004 .004 .005	.004 .005 .006 .006 .007	.005 .006 .008 .008 .009	.006 .007 .008 .009 .010	.008 .009 .010 .012			
.109 - .140 .141 - .172 .173 - .203 .204 - .249 .250 - .320	.0045 .006 .007 .009 .013	.0045 .006 .007 .009 .013	.005 .008 .009 .011 .013	.007 .009 .011 .013 .015	.009 .011 .013 .015 .017	.010 .012 .015 .017 .020	.012 .015 .017 .020 .023			
.321 - .438 .439 - .625 .626 - .875 .876 - 1.125 1.126 - 1.375	.019 .025 .030 .035 .040	.019 .025 .030 .035 .040	.019 .025 .030 .035 .040	.019 .025 .030 .035 .040	.023 .030 .037 .045 .052	.026 .035 .045 .055 .065	.026 .035 .045 .055 .065	.035 .040 .050 .060 .070	.043 .046 .056 .066 .075	.052 .055 .064 .074 .082
1.376 - 1.625 1.626 - 1.875 1.876 - 2.250 2.251 - 2.750 2.751 - 3.000	.045 .052 .060 .075 .090	.045 .052 .060 .075 .090	.045 .052 .060 .075 .090	.045 .052 .060 .075 .090	.060 .070 .080 .100 .120	.075 .088 .100 .125 .150	.075 .088 .100 .125 .150	.080	.085	.092
3.001 - 4.000 4.001 - 5.000 5.001 - 6.000	.110 .125 .135	.110 .125 .135	.110 .125 .135	.110 .125 .135	.140 .150 .160	.160 .160 .170	.160			

^a When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

ANSI H35.2 (cont)

SECTION 3. SHEET AND PLATE (cont)

Table 3.3 • WIDTH^a SHEARED FLAT SHEET AND PLATE

Specified Thickness Inch	Specified Width -- Inch					
	Up thru 6	Over 6 thru 24	Over 24 thru 60	Over 60 thru 96	Over 96 thru 132	Over 132 thru 168
	Tolerance ^b -- Inch					
.006 - .124	± .062	± .093	± .125	± .125	± .156	+ .500
.125 - .249	± .093	± .093	± .125	± .156	± .187	
.250 - .499	+ .250	+ .312	+ .375	+ .375	+ .437	

Table 3.4 • WIDTH AND LENGTH^a SAWED FLAT SHEET AND PLATE

Specified Thickness Inch	Specified Width and Length -- Inch							
	Up thru 30	Over 30 thru 60	Over 60 thru 120	Over 120 thru 240	Over 240 thru 360	Over 360 thru 480	Over 480 thru 600	Over 600 thru 720
	Tolerance ^b - Inch							
.080 - .249	± .125	± .125	± .187	± .250	± .250	± .312	± .375	± .437
.250 - 6.000	+ .250	+ .312	+ .375	+ .500	+ .562	+ .625	+ .750	+ .875

Table 3.5 • LENGTH^a SHEARED FLAT SHEET AND PLATE

Specified Thickness Inch	Specified Width -- Inch							
	Up thru 30	Over 30 thru 60	Over 60 thru 120	Over 120 thru 240	Over 240 thru 360	Over 360 thru 480	Over 480 thru 600	Over 600 thru 720
	Tolerance ^b - Inch							
.006 - .124	± .062	± .093	± .125	± .156	± .187	± .218	± .281	+ .750
.125 - .249	± .093	± .093	± .125	± .156	± .218	± .250	± .312	
.250 - .499	+ .250	+ .375	+ .437	+ .500	+ .562	+ .625	+ .687	

Table 3.6 • WIDTH^a SLIT COILED SHEET

Specified Thickness Inch	Specified Width -- Inch					
	Up thru 6	Over 6 thru 12	Over 12 thru 24	Over 24 thru 48	Over 48 thru 60	Over 60 thru 96
	Tolerance -- Inch Plus and Minus					
.006 - .125	.010	.016	.031	.046	.062	.125
.126 - .186	.012	.020	.031	.062	.093	
.187 - .249	.016	.025	.046	.093	.125	

Table 3.7 • LATERAL BOW COILED SHEET

Specified Thickness Inch	Specified Width -- Inch				
	.500 thru 1	Over 1 thru 2	Over 2 thru 4	Over 4 thru 10	Over 10
	Tolerance -- Inch in 6 Feet Allowable Deviation of a Side Edge from a Straight Line				
.006 - .064	.750	.562	.375	.250	.187
.065 - .125			.375	.250	.187

^a When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^b Tolerances applicable at ambient mill temperatures. A change in length of .013 inch per 100 inches per 10° F (6°C) must be recognized.

ANSI H35.2 (cont)

SECTION 3. SHEET AND PLATE (cont)

Table 3.8 • LATERAL BOW FLAT SHEET AND PLATE

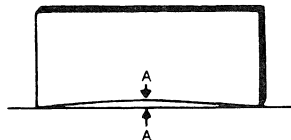
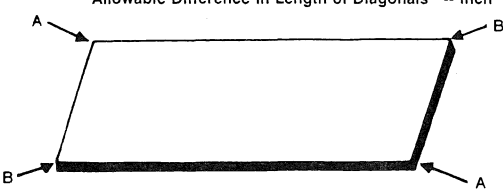
Specified Width Inch	Specified Thickness Inch	Allowable Deviation of a Side Edge from a Straight Line							
									
		Maximum Allowable Value of AA							
		Specified Length -- Inch							
		Up thru 30	Over 30 thru 60	Over 60 thru 90	Over 90 thru 120	Over 120 thru 150	Over 150 thru 180	Over 180 thru 210	Over 210 thru 240
		Tolerance -- Inch							
4.000 & under Over 4 thru 35 Over 35	.006 - .125	.062	.250	.500	1.000	1.500	2.000	3.000	4.000 ^a
	.006 - .249	.031	.062	.093	.125	.187	1.000	1.500	2.000 ^a
	.006 - .249	.031	.062	.093	.125	.187	.312	.437	.562 ^a
10.000 & under Over 10 thru 18 Over 18	.250 - 6.000	.062	.250	.500	1.000	1.500	2.000	3.000	4.000 ^a
	.250 - 6.000	.031	.062	.125	.250	.406	.593	.781	1.000 ^a
	.250 - 6.000	.031	.062	.093	.125	.187	.312	.437	.562 ^a

Table 3.9 • SQUARENESS FLAT SHEET AND PLATE

Specified Length Foot	Specified Width -- Foot	
	Up thru 3	Over 3
	Allowable Difference in Length of Diagonals ^b -- Inch 	
	Maximum Difference Between AA and BB	
12.000 & under	.0938 x Width, Foot ^c	.0781 x Width, Foot ^c
Over 12	.1406 x Width, Foot ^c	.1093 x Width, Foot ^c

^a Also applicable to any 240-inch increment of longer sheet or plate.^b Use values for calculating only. Round result upward to nearest .0625 inch.^c If specified width is other than an exact multiple of 12 inches, tolerance is determined by using the next largest exact multiple. For example, if specified width is 53 inches and specified length is 72 inches, the tolerance is .0781 inch x 5 = .3906 inch. This result is then rounded to .4375 inch in accordance with footnote b.

ANSI H35.2 (cont)

3. SHEET AND PLATE (cont)

Table 3.10 • DIAMETER^a SHEARED OR
BLANKED SHEET
AND PLATE
CIRCLES


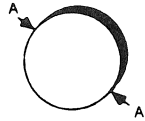
Specified Thickness Inch	Specified Diameter -- Inch				
	Up thru 18	Over 18 thru 36	Over 36 thru 96	Over 96 thru 132	Over 132 thru 168
	Allowable Deviation from Specified Diameter -- Inch Plus and Minus				
					
	Difference Between AA and Specified Diameter				
.006 - .249	.031	.046	.062	.125	.187
.250 - .375		.062	.125	.187	.250
.376 - .625		.125	.187	.250	.375
.626 - .875		.187	.250	.375	.500
.876 - 1.250		.250	.375	.500	.625

Table 3.11 • DIAMETER^a SAWED SHEET
AND PLATE CIRCLES

Specified Thickness Inch	Specified Diameter -- Inch			
	Up thru 18	Over 18 thru 60	Over 60 thru 132	Over 132 thru 168
	Allowable Deviation from Specified Diameter -- Inch Plus and Minus			
				
	Difference Between AA and Specified Diameter			
.080 - 1.000	.125	.187	.250	.500
1.001 - 3.000	.250	.375	.500	.750

^a When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions.

ANSI H35.2 (cont)

SECTION 3. SHEET AND PLATE (cont)

Table 3.12 • FLATNESS^a FLAT SHEET

Alloy (Includes Alclads)	Thickness Inch	Longitudinal or Transverse Distances, Foot, Center-to-Center of Buckles or Edge Waves ^b				
		Up thru 2	Over 2 thru 3	Over 3 thru 4	Over 4 thru 6	Over 6
		Tolerance ^{c,d} -- Inch				
EC, 1060, 1100, 3003, 3105, 5005, 5050, 5X57	.020 - .064 .065 - .249	.125 .125	.187 .187	.187 .312	.312 .375	.375 .500
3004, 3005, 5052, 5083, 5086, 5252, 5X54, 5456, 5652, Brazing Sheet, and All Heat Treatable Alloys	.020 - .064 .065 - .249	.187 .187	.187 .312	.312 .375	.375 .500	.500 .562

^a Not applicable to cut-to-length sheet, panel flat sheet, coiled sheet, or sheet over 60 inches wide.^b Also applicable to overall length or width of sheet if only one longitudinal and/or transverse buckle or edge wave is present.^c Not applicable to annealed (O temper) or HX8 temper.^d Not applicable to end or corner turnup.

ANSI H35.2 (cont)

SECTION 3. SHEET AND PLATE (cont)

Table 3.13 • FLATNESS^a SAWED OR SHEARED PLATE

LONGITUDINAL FLATNESS

Specified Thickness, Inch	Tolerance ^b Inch -- Allowable Deviation from Flat	
	TX51 Tempers ^c	Other than TX51 Tempers ^{c,d}
.250 - 3.000 3.001 - 6.000	.1875 in any 6 Feet ^e .125 in any 6 Feet or Less	.250 in any 6 Feet or Less .250 in any 6 Feet or Less

TRANSVERSE FLATNESS

Specified Thickness, Inch	Tolerance ^b Inch -- Allowable Deviation from Flat				
	Widths Over 4 Feet thru 6 Feet ^f		Widths Over 2 Feet thru 4 Feet		Widths 2 Feet and Less
	TX51 Tempers ^c	Other than TX51 Tempers ^{c,d}	TX51 Tempers ^e	Other than TX51 Tempers ^{e,d}	All Tempers ^d
.250 - .624 .625 - 1.500 1.501 - 3.000 3.001 - 6.000	.375 .312 .187 .125	.500 .375 .250 .250	.312 .187 .187 .125	.375 .250 .187 .187	Only Short-cycle Flatness Tolerance Applies

SHORT-CYCLE FLATNESS^g

Specified Thickness, Inch	Tolerance ^h Inch -- Allowable Deviation from Flat	
	TX51 Tempers ^c	TX51 Tempers ^{c,d}
.250 - .624 .675 - 6.000	.100 .075	.125 .090

^a Not applicable to cut-to-length sheet, panel flat sheet, coiled sheet, or sheet over 60 inches wide.

^b As measured with sheet or plate resting on flat surface concave side upward, using a straightedge and a feeler gauge, dial gauge or scale.

^c TX51 is a general designation for the following stress-relieved tempers: T351, T451, T651, T6151, T7351 and T7651.

^d Not applicable to annealed (0 temper) plate in any alloy or F temper plate in heat-treatable alloys.

^e For lengths under 6 feet, the tolerance is .125 inch.

^f For widths over 6 feet, these tolerances apply for any 6 feet of total width.

^g Short-cycle flatness is the flatness over any 2-foot span in any direction.

^h As measured with the plate resting on a flat surface, and by use of a frame with rollers mounted on 2-foot centers and a depth gauge in the center.

ANSI H35.2 (cont)

SECTION 9. WIRE, ROD AND BAR -- ROLLED OR COLD-FINISHED

Table 9.1 • DIAMETER ROUND WIRE AND ROD

Specified Diameter Inch	Tolerance--Inch Plus and Minus (Except as Noted)			
	Allowable Deviation from Specified Diameter			
	Drawn Wire	Cold Finished Rod	Rolled Rod	
			Plus	Minus
.035 & under .036 - .064 .065 - .374 .375 - .500	.0005 .001 .0015	.0015		
.501 - 1.000 1.001 - 1.500 1.501 - 2.000 2.001 - 3.000		.002 .0025 .004 .006	.006 .008	.006 .008
3.001 - 3.499 3.500 - 5.000 5.001 - 8.000		.008 .012	.012 .031 .062	.012 .016 .031

Table 9.2 • DIAMETER CENTERLESS GROUND ROUND WIRE AND ROD

Specified Diameter Inch	Tolerance Inch Plus and Minus
	Allowable Deviation From Specified Diameter
.125 - .625 .626 - 1.500 1.501 - 2.000	.0005 .0010 .0025

Table 9.3 • DIAMETER RIVET & COLD HEADING WIRE AND ROD

Specified Diameter Inch	Tolerance			
	Allowable Deviation from Specified Diameter			
	Rivet Wire		Rivet Rod	
	Inch Plus	Inch Minus	Inch Plus	Inch Minus
.061 & under .062 - .123 .124 - .154	.0005 .001 .001	.0005 .0005 .001		
.155 - .374 .375 - .500 .501 - 1.000	.002	.001	.002 .003	.001 .001

Table 9.4 • DIAMETER REDRAW ROD

Specified Diameter Inch	Tolerance--Inch Plus and Minus
	Allowable Deviation from Specified Diameter
0.375	.020

Table 9.5 • THICKNESS AND WIDTH RECTANGULAR WIRE AND BAR

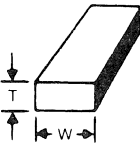
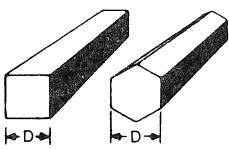
Specified Thickness or Width Inch 	Tolerance Inch Plus and Minus			
	Allowable Deviation from Specified Thickness and Width			
	Drawn Wire and Cold Finished Bar		Rolled Bar	
	Thickness	Width	Thickness	Width
.035 & under .036 - .064 .065 - .500 .501 - .750	.001 .0015 .002 .0025	.002 .0025	.006 .008	.016
.751 - 1.000 1.001 - 1.500 1.501 - 2.000 2.001 - 3.000	.0025 .003 .005 .008	.0025 .003 .005 .008	.012 .016 .016 .020	.016 .016 .031 .031
3.001 - 4.000 4.001 - 6.000 6.001 - 10.000		.010	.020	.031 .047 .062

Table 9.6 • DISTANCE ACROSS FLATS SQUARE, HEXAGONAL AND OCTAGONAL WIRE AND BAR

Specified Distance Across Flats Inch 	Tolerance Inch Plus and Minus		
	Allowable Deviation From Specified Distance Across Flats		
	Drawn Wire	Cold Finished Bar	Rolled Bar
.035 & under .036 - .064 .065 - .374	.001 .0015 .002		
.375 - .500 .501 - 1.000 1.001 - 1.500		.002 .0025 .003	
1.501 - 2.000 2.001 - 3.000 3.001 - 4.000		.005 .008	.016 .020 .020

ANSI H35.2 (cont)

SECTION 9. WIRE, ROD AND BAR -- ROLLED OR COLD FINISHED

Table 9.7 • THICKNESS AND WIDTH
FLATTENED WIRE (ROUND EDGE)

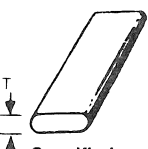
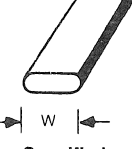
 Specified Thickness Inch	Tolerance Inch Plus and Minus	 Specified Width Inch	Tolerance Inch Plus and Minus
	Allowable Deviation From Specified Thickness		Allowable Deviation From Specified Width
.020 & under .021 - .060 .061 - .187	.001 .0015 .002	.875 & under .876 - 2.000	.007 .010

Table 9.8 • THICKNESS AND WIDTH
FLATTENED AND SLIT WIRE

Specified Thickness Inch	Tolerance Inch Plus and Minus	Specified Width Inch	Tolerance Inch Plus and Minus
	Allowable Deviation From Specified Thickness		Allowable Deviation From Specified Width
.018 - .020 .021 - .060 .061 - .080	.001 .0015 .002	.500 - .625 .626 - 1.500 1.501 - 4.750	.0025 .004 .006

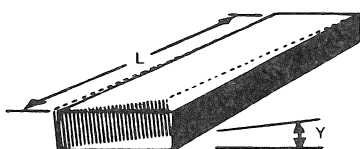
Table 9.9 • THICKNESS AND WIDTH
ROUGH ROLLED ROUND CORNERED
SQUARE AND RECTANGULAR BAR

Specified Thickness Inch	Tolerance Inch Plus and Minus	Specified Width Inch	Tolerance Inch Plus and Minus
	Allowable Deviation From Specified Thickness		Allowable Deviation From Specified Width
2.000 - 8.000	.0625	4.000 - 16.000	.250

Table 9.10 • LENGTH SPECIFIC &
MULTIPLE

Specified Diameter Width or Distance Across Flats Inch	Tolerance -- Inch Plus			
	Allowable Deviation From Specified Length			
	Specified Length -- Foot			
	Up thru 12	Over 12 thru 30	Over 30 thru 50	Over 50
2.999 & under 3.000 - 7.999 8.000 & over	.125 .1875 .250	.250 .3125 .375	.375 .4375 .500	1.000 1.000 1.000

Table 9.11 • TWIST BAR IN STRAIGHT LENGTHS

Product	Temper	Specified Width (Rectangles); Specified Distance Across Flats (Square, Hexagons and Octagons) Inch	Tolerance ^{a,c} -- Degrees Allowable Deviation from Straight	
			 Y (Max) in Degrees	
			In any Foot or Less of Length	In Total Length of Piece ^c
Square, Rectangular and Octagonal Bar	All Except 0 and TX51 ^b	1.499 & under 1.500 - 2.999 3.000 & over	1.500 1.000 .500	1.000 x Length, Foot 7° Max .500 x Length, Foot 5° Max .250 x Length, Foot 3° Max
	TX51 ^b	.500 - 2.999 3.000 & over	1.500 1.000	1.500 x Length, Foot 7° Max .500 x Length, Foot 5° Max
Hexagonal Bar	All Except 0	1.499 & under 1.500 - 2.999 3.000 & over	1.500 1.000 .500	1.000 x Length, Foot 7° Max .500 x Length, Foot 5° Max .250 x Length, Foot 3° Max

^a For TX51 tempers, tolerance is applicable only to thicknesses of .500 inch and over.^b TX51 is a general designation for the following stress-relieved tempers: T351, T651, T851 and T7351.^c When weight of piece on flat surface minimizes deviation.

ANSI H35.2 (cont)**SECTION 9. WIRE, ROD AND BAR -- ROLLED OR COLD-FINISHED (cont)****Table 9.12 • STRAIGHTNESS ROD AND BAR IN STRAIGHT LENGTHS OTHER THAN SCREW MACHINE STOCK**

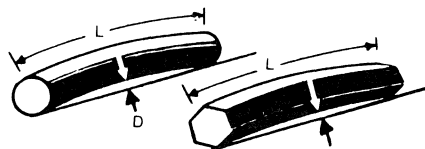
Product	Temper	Specified Diameter (Rod) Specified Distance Across Flats (Squares, Hexagons and Octagons) Specified Thickness (Rectangles) Inch	Tolerance ^a -- Degrees Allowable Deviation (D) from Straight	
				
			In any Foot or Less of Length	In Total Length of Piece
ROLLED				
Rod and Hexagonal, Square, Rectangular and Octagonal Bar	All Except 0	All	.050	.050 x Length, Foot
COLD FINISHED				
Rod and Hexagonal Bar	All Except 0 and TX51 ^b	All	.025	.025 x Length, Foot
	TX51 ^b	.500 & over	.025	.025 x Length, Foot
Square, Rectangular and Octagonal Bar	All Except 0 and TX51 ^b	All	.025	.025 x Length, Foot
	TX51 ^b	.500 & over	.050	.050 x Length, Foot

Table 9.13 • STRAIGHTNESS SCREW MACHINE STOCK

Specified Diameter (Rod) Specified Distance Across Flats (Hexagonal Bar) Inch	Temper	Tolerance ^a -- Inch	
		Allowable Deviation From Straight	
		In Any Foot or Less of Length	In 12 Foot Lengths
All .500 Inch & over	All Except TX51 ^b TX51 ^b	.0125 .0125	.100 .100

^a When weight of piece on flat surface minimizes deviation.^b TX51 is a general designation for the following stress-relieved tempers: T351, T451, T651, T851, and T7351

ANSI H35.2 (cont)

SECTION 9. WIRE, ROD AND BAR -- ROLLED OR COLD-FINISHED (cont)

Table 9.14 • FLATNESS (FLAT SURFACES)

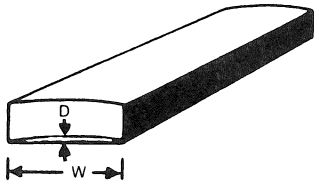
Surface Width Inch	Tolerance -- Inch
	 <p>Maximum Allowable Deviation: D</p>
1 & under	.004
Over 1	.004 x Width (Inch)
In any 1 Inch of Width	.004

Table 9.15 • ANGULARITY

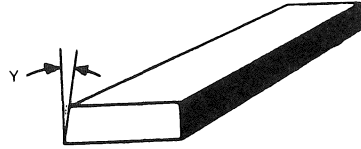

Allowable Deviation from Nominal Angle: ± 1 Degree.

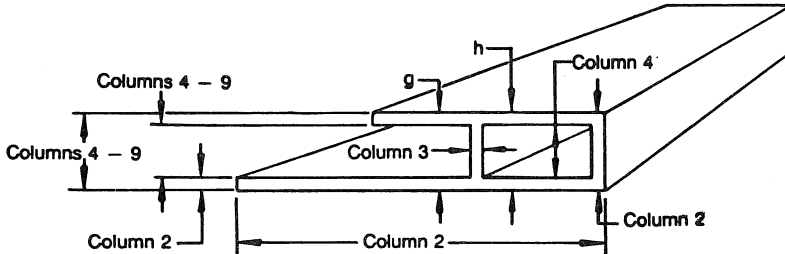
Table 9.16 • SQUARENESS OF SAW CUTS

Allowable Deviation from Nominal Angle: 1 Degree.

ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES

Table 10.1 • CROSS-SECTIONAL DIMENSIONS WIRE, ROD, BAR & SHAPES^a EXCEPT FOR SHAPES IN T3510, T4510, T6510, T73510, T76510 AND T8510 TEMPER^b

															
Tolerances ^{c,d} - Inch Plus and Minus															
Specified Dimension Inch	Metal Dimensions				Space Dimensions										
	Allowable Deviation From Specified Dimension Where 75 Per Cent or More of the Dimension is Metal ^{e,f}				Allowable Deviation From Specified Dimension Where More Than 25 Per Cent of the Dimension is Space ^{g,h}										
	All Except Those Covered By Column 3	Wall Thickness ⁱ Completely Enclosing Space .110 Sq In and Over (Eccentricity)	At Dimensioned Points .250 - .624 Inch From Base of Leg	At Dimensioned Points .625 - 1.249 Inch From Base of Leg	At Dimensioned Points 1.250 - 2.499 Inch From Base of Leg	At Dimensioned Points 2.500 - 3.999 Inch From Base of Leg	At Dimensioned Points 4.000 - 5.999 Inch From Base of Leg	At Dimensioned Points 6.000 - 8.000 Inch From Base of Leg							
Column 1	Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8		Column 9
	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456
CIRCUMSCRIBING CIRCLE SIZES LESS THAN 10 INCHES IN DIAMETER															
Up thru .124	.009	.006	± 15% of Specified Dimension; ± .090 Max ± .015 Min	± 10% of Specified Dimension; ± .060 Max ± .010 Min	.013	.010	.015	.012	.020	.016	.024	.020	.035	.030	
.125 - .249	.011	.007			.016	.012	.018	.014	.022	.018	.027	.022			
.250 - .499	.012	.008			.018	.014	.020	.016	.024	.020	.027	.022			
.500 - .749	.014	.009			.021	.016	.023	.018	.025	.020	.027	.022			
.750 - .999	.015	.010			.023	.018	.025	.020	.027	.022	.030	.025			
1.000 - 1.499	.018	.012			.027	.021	.029	.023	.032	.026	.036	.030	.041	.035	
1.500 - 1.999	.021	.014			.031	.024	.033	.026	.038	.031	.043	.036	.049	.042	.057
2.000 - 3.999	.036	.024			.046	.034	.050	.038	.060	.048	.069	.057	.080	.068	.092
4.000 - 5.999	.051	.034			.061	.044	.067	.050	.081	.064	.095	.078	.111	.094	.127
6.000 - 7.999	.066	.044			.076	.054	.084	.062	.104	.082	.121	.099	.142	.120	.162
8.000 - 9.999	.081	.054			.091	.064	.101	.074	.127	.100	.147	.120	.182	.145	.197
CIRCUMSCRIBING CIRCLE SIZES 10 INCHES IN DIAMETER AND OVER															
Up thru .124	.021	.014	± 15% of Specified Dimension; ± .090 Max ± .025 Min	± 15% of Specified Dimension; ± .090 Max ± .015 Min	.025	.018	.027	.020	.035	.028	.058	.050	.099	.090	
.125 - .249	.022	.015			.026	.019	.029	.022	.038	.030	.068	.060			
.250 - .499	.024	.016			.028	.020	.032	.024	.043	.036	.078	.070			
.500 - .749	.025	.017			.030	.022	.035	.027	.049	.040	.088	.080			
.750 - .999	.027	.018			.031	.023	.039	.030	.057	.050	.099	.090			
1.000 - 1.499	.028	.019			.033	.024	.043	.034	.069	.060	.109	.090	.109	.100	
1.500 - 1.999	.036	.024			.046	.034	.056	.044	.082	.070	.122	.102	.122	.110	.182
2.000 - 3.999	.051	.034			.061	.044	.071	.054	.097	.080	.137	.117	.137	.120	.197
4.000 - 5.999	.066	.044			.076	.054	.086	.064	.112	.090	.152	.132	.152	.130	.212
6.000 - 7.999	.081	.054			.091	.064	.101	.074	.127	.100	.167	.147	.167	.140	.227
8.000 - 9.999	.096	.064			.106	.074	.116	.084	.142	.110	.182	.162	.182	.150	.242
10.000 - 11.999	.111	.074			.121	.084	.131	.094	.157	.120	.197	.177	.197	.160	.257
12.000 - 13.999	.126	.084			.136	.094	.146	.104	.172	.130	.212	.192	.212	.170	.272
14.000 - 15.999	.141	.094			.151	.104	.161	.114	.187	.140	.227	.207	.227	.180	.287
16.000 - 17.999	.156	.104			.166	.114	.176	.124	.202	.150	.242	.222	.242	.190	.302
18.000 - 19.999	.171	.114			.181	.124	.191	.134	.217	.160	.257	.237	.257	.200	.317
20.000 - 21.999	.186	.124			.196	.134	.206	.144	.232	.170	.272	.252	.272	.210	.332
22.000 - 24.000	.201	.134			.211	.144	.221	.154	.247	.180	.287	.267	.287	.220	.347

Footnotes for Table 10.1 are on page 16-21.

ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES (cont)

Table 10.1 Footnotes

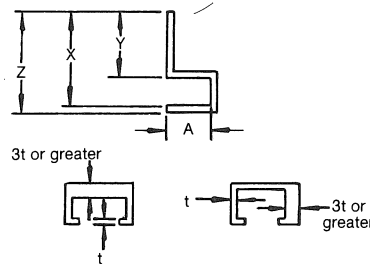
^a These standard tolerances are applicable to the average shape; wider tolerances may be required for some shapes and closer tolerances may be possible for others.

^b Tolerances for extruded shapes in T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be agreed upon between purchaser and vendor at the time the contract or order is entered.

^c The tolerances applicable to a dimension composed of two or more component dimensions is the sum of the tolerances of the component dimensions if all of the component dimensions are indicated.

^d When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^e These tolerances do not apply to space dimensions such as dimensions "X" and "Z" of the example (right) even when "Y" is 75 percent or more of "X". For the tolerance applicable to dimension "X" and "Z", use Column 4, 5, 6, 7, 8, or 9 dependent on distance "A".



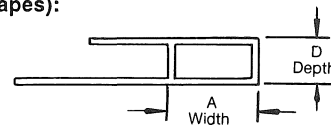
^f The wall thickness tolerance for hollow or semihollow shapes shall be as agreed upon between purchaser and vendor at the time the contract or order is entered when the nominal thickness of one wall is three times greater than that of the opposite wall. (Examples at right)

^g At points less than .250 inch from base of leg the tolerances in Column 2 are applicable.

^h The following tolerances apply where the space is completely enclosed (hollow shapes):

For the width (A) the tolerance is the value shown in Column 4 for the depth (D).

For the depth (D) the tolerance is the value shown in Column 4 for the width (A).



In no case is the tolerance for either width or depth less than at the corners (Column 2, metal dimensions).

Example - Alloy 6061 hollow shape having 1 x 3 inch rectangular outside dimensions: width tolerance is $\pm .021$ inch and depth tolerance $\pm .034$ inch. (Tolerances at corners, Column 2, metal dimensions, are $\pm .024$ inch for the width and $\pm .012$ inch for the depth.) Note that the Column 4 tolerance of .021 inch must be adjusted to .024 inch so that it is not less than the Column 2 tolerance.

ⁱ Where dimensions specified are outside and inside, rather than wall thickness itself, the allowable deviation (eccentricity) given in Column 3 applies to mean wall thickness. (Mean wall thickness is the average of two wall thickness measurements taken at opposite sides of the void).

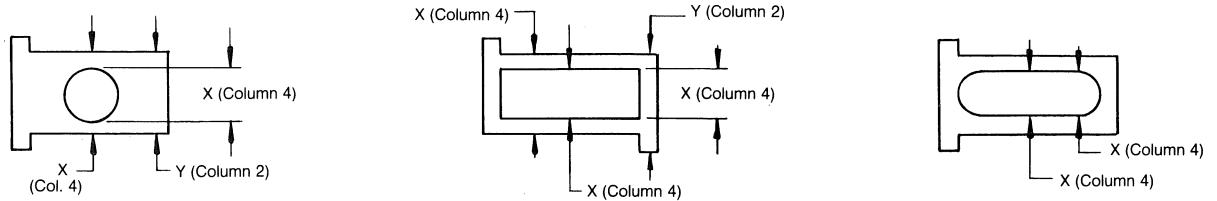
^j In the case of Class 1 Hollow Shapes the standard wall thickness tolerance for extruded round tube is applicable. (A Class 1 Hollow Shape is one whose void is round and one inch or more in diameter and whose weight is equally distributed on opposite side of two or more equally spaced axes.)

ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES (cont)

EXAMPLES ILLUSTRATING USE OF TABLE 10.1 (Table 10.1 is found on page 16-20)

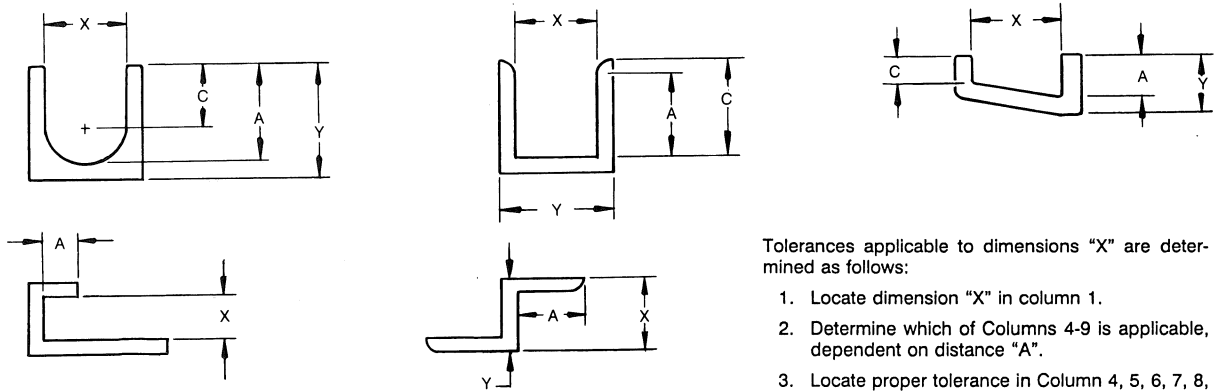
Closed-space Dimensions



All dimensions designated "Y" are classed as "metal dimensions" and tolerances are determined from column 2.

Dimensions designated "X" are classed as "space dimensions through an enclosed void" and the tolerances applicable are determined from Column 4 unless 75 percent or more of the dimension is metal, in which case Column 2 applies.

Open-space Dimensions



Tolerances applicable to dimensions "X" are determined as follows:

1. Locate dimension "X" in column 1.
2. Determine which of Columns 4-9 is applicable, dependent on distance "A".
3. Locate proper tolerance in Column 4, 5, 6, 7, 8, or 9 in the same line as dimension "X".

Dimensions "Y" are "metal dimensions" - tolerances are determined from Column 2. Distances "C" are shown merely to indicate incorrect values for determining which of Columns 4-9 apply.



Tolerances applicable to dimensions "X" are determined as follows:

1. Locate distance "B" in column 1.
2. Determine which of Columns 4-9 is applicable, dependent on distance "A".
3. Locate proper tolerance in Column 4, 5, 6, 7, 8 or 9 in same line as value chosen in Column 1.

Tolerances applicable to dimensions "X" are not determined from Table 10.1; tolerances are determined by standard tolerances applicable to angles "A".

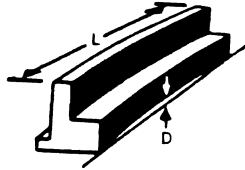
ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES (cont)

TABLE 10.2 • LENGTH^a WIRE, ROD, BAR AND SHAPES

Specified Diameter (Wire and Rod); Specified Width (Bar); Circumscribing Circle Diameter ^b (Shapes); Inch	Tolerance – Inch Plus			
	Allowable Deviation from Specified Length			
	Specified Length – Feet			
	Up thru 12	Over 12 thru 30	Over 12 thru 30	Over 50
Up thru 2.999	.125	.250	.375	1
3.000 - 7.999	.1875	.3125	.4375	1
8.000 and Over	.250	.375	.500	1

TABLE 10.3 • STRAIGHTNESS^a ROD, BAR AND SHAPES

Product	Temper	Specified Diameter (Rod); Specified Width (Bar); Circumscribing Circle Diameter ^b (Shapes); Inch	Specified Thickness (Rectangles); Minimum Thickness (Shapes); Inch	Tolerance ^c – Inch
				Allowable Deviation (D) from Straight
				 In Total Length or in any Measured Segment of One Foot or More of Total Length
Rod and Square, Hexagonal and Octagonal Bar	All Except 0, TX510, TX511 ^d	All		.0125 x Length, Feet
	TX510 ^d	.500 and Over		.0500 x Length, Feet
	TX511 ^d	.500 and Over		.0125 x Length, Feet
Rectangular Bar	All except 0, TX510,	Up thru 1.499	Up thru .094 .095 and Over	.0500 x Length, Feet .0125 x Length, Feet
	TX511 ^d	1.500 and Over	All	.0125 x Length, Feet
	TX510 ^d	Over .500	.500 and Over	.0500 x Length, Feet
	TX511 ^d	Over .500	.500 and Over	.0125 x Length, Feet
Shapes	All except 0, TX510,	Up thru 1.499	Up thru .094 .095 and Over	.0500 x Length, Feet .0125 x Length, Feet
	TX511 ^d	1.500 and Over	All	.0125 x Length, Feet
	TX510 ^d	.500 and Over	.095 and Over	^e
	TX511 ^d	.500 and Over	Up thru .094 .095 and Over	.0500 x Length, Feet .0125 x Length, Feet

^a These Standard Tolerances are applicable to the average shape; wider tolerances may be required for some shapes and closer tolerances may be possible for others.

^b The circumscribing circle diameter is the diameter of the smallest circle that will completely enclose the cross-section of the extruded product.

^c When weight of piece on flat surface minimizes deviation.

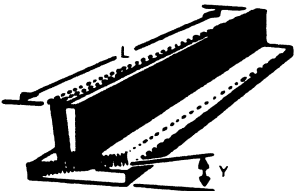
^d TX510 and TX511 are general designations for the following stress-relieved tempers: T3510, T4510, T6510, T8510, T73510, T76510 and T3511, T4511, T6511, T8511, T73511, T76511, respectively.

^e Tolerances for 0, T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.

ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES (cont)

TABLE 10.4 • TWIST^{a,b} BAR AND SHAPES

Product	Temper	Specified Diameter (Rod); Specified Width (Bar); Circumscribing Circle Diameter ^b (Shapes); Inch	Specified Thickness (Rectangles); Minimum Thickness (Shapes); Inch	Tolerance ^c —Inch
				Allowable Deviation from Straight 
Bar	All except 0, TX510, TX511 ^e	Up thru 1.499 1.500-2.999 3.000 and Over	All All All	1.000 x Length, Feet: 7° Max .500 x Length, Feet: 5° Max .250 x Length, Feet: 3° Max
	TX510 ^e	.500-2.999 3.000 and Over	.500 and Over .500 and Over	1.500 x Length, Feet: 7° Max .500 x Length, Feet: 5° Max
	TX511 ^e	.500-1.499 1.500-2.999 3.000 and Over	.500 and Over .500 and Over .500 and Over	1.000 x Length, Feet: 7° Max .500 x Length, Feet: 5° Max .250 x Length, Feet: 3° Max
Shapes	All except 0, TX510, TX511 ^e	Up thru 1.499 1.500-2.999 3.000 and Over	All All All	1.000 x Length, Feet: 7° Max .500 x Length, Feet: 5° Max .250 x Length, Feet: 3° Max
	TX510 ^e	.500 and Over	.095 and Over	f
	TX511 ^e	.500 and Over .500-1.499 1.500-2.999 3.000 and Over	.Up thru .094 .095 and Over .095 and Over .095 and Over	1.000 x Length, Feet: 7° Max 1.000 x Length, Feet: 7° Max .500 x Length, Feet: 5° Max .250 x Length, Feet: 3° Max

^a These Standard Tolerances are applicable to the average shape; wider tolerances may be required for some shapes and closer tolerances may be possible for others.

^b Twist is normally measured by placing the extruded section on a flat surface and measuring the Maximum distance at any point along its Length between the bottom surface of the section and the flat surface. From this measurement, the deviation from true straightness of the section is subtracted. The remainder is the twist. To convert the standard twist tolerance (degrees) to an equivalent linear value, the tangent of the standard tolerance is multiplied by the width of the surface of the section that is on the flat surface. The following values are used to convert angular tolerance to linear deviation.

Tolerance, Degrees	Max. Allowable Linear Deviation Inch Per Inch of Width
.250	.004
.500	.009
1.000	.017
1.500	.026
3.000	.052
5.000	.087
7.000	.123

^c When weight of piece on flat surface minimizes deviation.

^d The circumscribing circle diameter is the diameter of the smallest circle that will completely enclose the cross-section of the extruded product.

^e TX510 and TX511 are general designations for the following stress-relieved tempers: T3510, T4510, T6510, T8510, T73510, T76510 and T3511, T4511, T6511, T8511, T73511, T76511, respectively.

^f Tolerances for 0, T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.

ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES (cont)

TABLE 10.5 • FLATNESS (Flat Surfaces)^a
 BAR, SOLID SHAPES AND SEMIHOLLOW
 SHAPES EXCEPT FOR SHAPES IN 0,
 T3510, T4510, T6510, T73510, T76510
 AND T8510 TEMPER^b

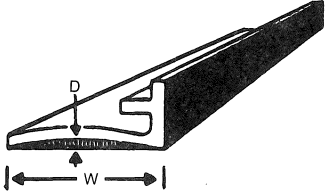
Surface Width Inch	Tolerance—Inch
	 Maximum Allowable Deviation D
Up thru 1 Over 1 thru 5.999 In Any 1 Inch of Width	.004 .004 x W (Inch) .004

TABLE 10.6 • FLATNESS (Flat Surfaces)^a
 HOLLOW SHAPES EXCEPT FOR 0, T3510,
 T4510, T6510, T73510, T76510 AND T8510
 TEMPER^b

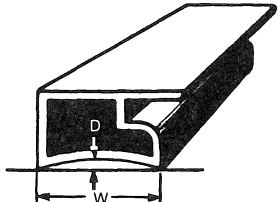
Minimum Thickness of Metal Forming the Surface Inch	Tolerance—Inch	
	 Maximum Allowable Deviation D	
	Widths Up Thru 1 Inch or Any 1 Inch Increment of Wider Surfaces	Widths Over 1 Inch Thru 5.999 Inch
Up thru .187 .188 and Over	.006 .004	.006 x W (Inch) .006 x W (Inch)

TABLE 10.7 • SURFACE ROUGHNESS^{a,c}
 WIRE, ROD, BAR AND SHAPES

Specified Section Thickness Inch	Allowable Depth of Defect ^d Inch Maximum
Up thru .063	.0015
.064 - .125	.002
.126 - .188	.0025
.189 - .250	.003
.251 - .500	.004
.501 and over	.008

TABLE 10.8 • CONTOUR (Curved Surfaces)^{a,e}
 SHAPES EXCEPT FOR 0, T3510, T4510,
 T6510, T73510, T76510 AND T8510
 TEMPER^b

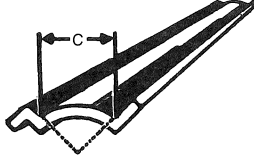

Allowable deviation from specified contour: .005 inch per inch of chord length ; .005 inch minimum. Not applicable to contours with chord length 6 inch and over. ^e

TABLE 10.9 • SQUARENESS OF CUT ENDS^a
 WIRE, ROD, BAR AND SHAPES

Allowable Deviation from Square: 1 Degree.

^a These standard tolerances are applicable to the average shape - wider tolerances may be required for some shapes and closer tolerances may be possible for others.

^b Tolerances for 0, T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.

^c Not applicable to 2219 alloy extrusions. Most shapes in 2219 alloy will have die lines about twice the depth shown in the table, however for each shape the supplier should be contacted for the roughness value to apply.

^d Defects include die lines and handling marks.

^e As measured with a contour gauge whose surface is limited to a maximum subtended angle of 90 degrees. Extruded curved surfaces comprising more than a 90-degree subtended angle are checked by sliding the gauge across the surface, thus checking two or more 90-degree positions of the surface. Extruded shape surfaces comprised of arcs formed by two or more radii require the use of a separate contour gauge for each portion of the surface formed by an individual radius.

ANSI H35.2 (cont)

SECTION 10 EXTRUDED WIRE, ROD, BAR, AND SHAPES (cont)

TABLE 10.10 • CORNER AND FILLET RADII^a
BAR AND SHAPES

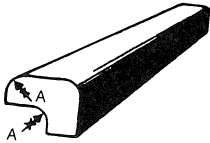
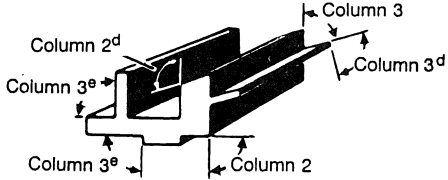
Specified Radius Inch	Tolerance—Inch or Percent
	Allowable Deviation from Specified Radius
	
Difference Between Radius A and Specified Radius	
Sharp Corners Up thru .187 .188 and Over	+ .0156 ± .0156 ± 10%

TABLE 10.11 • ANGULARITY^{a,b}
BAR AND SHAPES EXCEPT SHAPES IN
0, T3510, T4510, T6510, T73510, T76510
AND T8510 TEMPERS^c

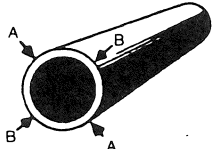
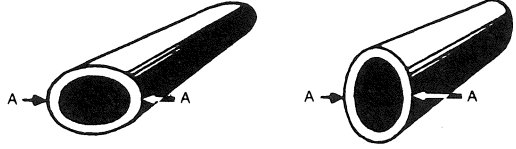
Minimum Specified Leg Thickness Inch	Tolerance Degrees Plus and Minus	
	Allowable Deviation from Specified Angle	
		
	Ratio: ^{d,e} Leg or Surface Length to Leg or Metal Thickness	
	1 and Less	Over 1 thru 40
Column 1	Column 2	Column 3
Up thru .187 .188 - .749 .750 and Over	1 1 1	2.000 1.500 1.000

^a These standard tolerances are applicable to the average shape; wider tolerances may be required for some shapes and closer tolerances may be possible for others.^b Angles are measured with protractors or with gauges. As illustrated, a four-point contact system is used, two contact points being as close to the angle vertex as practical, and the others near the ends of the respective surfaces forming the angle. Between these points of measurement surface flatness is the controlling tolerance.^c Tolerances for 0, T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.^d When the space between the surfaces forming an angle is all metal, values in column 2 apply if the larger surface length to metal thickness ratio is 1 or less.^e When two legs are involved the one having the larger ratio determines the applicable column.

ANSI H35.2 (cont)

SECTION 11. DRAWN TUBE

Table 11.1 • DIAMETER ROUND TUBE

Specified Diameter ^a Inch	Tolerance ^b -- Inch Plus and Minus		
	Allowable Deviation of Mean Diameter ^c From Specified Diameter (Size)	Allowable Deviation of Diameter at Any Point From Specified Diameter ^d (Ovalness)	
	 Difference Between 1/2 (AA + BB) and Specified Diameter	 Difference Between AA and Specified Diameter	
		Non-heat-treated Tube ^d	Heat-treated Tube ^e
Col. 1	Col. 2	Col. 3	Col. 4
.500 & under	.003	.003	.006
.501 - 1.000	.004	.004	.008
1.001 - 12.000	.005	.005	.010
2.001 - 3.000	.006	.006	.012
3.001 - 5.000	.008	.008	.016
5.001 - 6.000	.010	.010	.020
6.001 - 8.000	.015	.015	.030
8.001 - 10.000	.020	.020	.040
10.001 - 12.000	.025	.025	.050

^a When outside diameter, inside diameter and wall thickness (or their equivalent dimensions in other-than-round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three. When both outside and inside diameters are specified, tolerances applicable to the O.D. dimension shall apply to both O.D. and I.D.

^b When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^c Mean diameter is the average of two diameter measurements taken at right angles to each other at any point along the length.

^d Not applicable to annealed (0 temper) tube, coiled tube, or tube having a wall thickness less than 2-1/2 percent of the specified outside diameter. The tolerance for tube with wall thicknesses less than 2-1/2 percent of the specified outside diameter is determined by multiplying the applicable tolerance in columns 3 and 4 as follows:

- 2% to 2-1/2%, excl. -- 1.5 x tolerance
- 1-1/2% to 2%, excl. -- 2.0 x tolerance
- 1% to 1-1/2%, excl. -- 3.0 x tolerance

^e For the T8 tempers of 6063 the tolerances in Column 3 apply.

ANSI H35.2 (cont)

SECTION 11. DRAWN TUBE (cont)

Table 11.2 • WIDTH AND DEPTH SQUARE, RECTANGULAR, HEXAGONAL AND OCTAGONAL TUBE

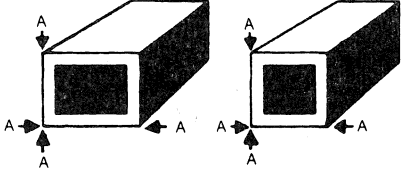
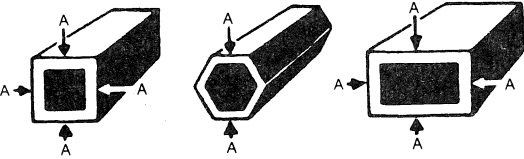
Specified Width or Depth ^a Inch	Tolerance ^b -- Inch Plus and Minus		
	Allowable Deviation of Width or Depth at Corners from Specified Width or Depth	Allowable Deviation of Width or Depth Not at Corners From Specified Width or Depth ^c	
	 Difference Between AA and Specified Width or Depth	 Difference Between AA and Specified Width, Depth, or Distance Across Flats	
	Square, Rectangular	Square, Hexagonal, Octagonal	Rectangular
Col. 1	Col. 2	Col. 3	Col. 4
.500 & under	.003	.006	The tolerance for the width is the value in Col. 3 for a dimension equal to the depth, and conversely, but in no case is the tolerance less than at the corners. ^d
.501 - 1.000	.004	.008	
1.001 - 2.000	.005	.010	
2.001 - 3.000	.006	.012	
3.001 - 5.000	.008	.016	
5.001 - 6.000	.010	.020	
6.001 - 8.000	.015	.030	
8.001 - 10.000	.020	.040	
10.001 - 12.000	.025	.050	

Table 11.3 • DIAMETER OVAL, ELLIPTICAL AND STREAMLINE TUBE

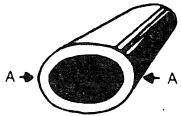
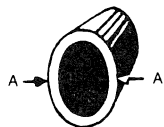
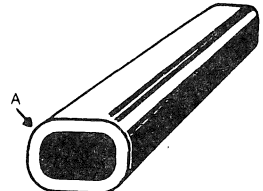
Equivalent Round Diameter ^e Inch	Tolerance ^{b,f} -- Inch			
	Length of Major Axis, Inch		Length of Minor Axis, Inch	
	 Difference Between AA and Specified Length		 Difference Between AA and Specified Length	
2.500 & under	+.040	-.025	+.025	-.015
2.501 - 4.250	+.050	-.035	+.035	-.025
4.251 - 6.000	+.070	-.050	+.055	-.040
6.001 - 8.000	+.100	-.085	+.080	-.060
8.001 - 10.000	+.160	-.140	+.115	-.085

Table 11.4 • CORNER RADII

Specified Radius Inch	Tolerance ^b -- Inch
	Allowable Deviation from Specified Radius
	 Difference Between Radius A and Specified Radius
Sharp Corners	+.0156
.187 & under	± .0156
.188 & over	± 10%

^a When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other-than-round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three. When both outside and inside diameters are specified, tolerances applicable to the O.D. dimension shall apply to both O.D. and I.D.

^b When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^c Not applicable to annealed (0 temper) tube, coiled tube, or tube having a wall thickness less than 2-1/2 percent of the specified outside diameter. The tolerance for tube with wall thicknesses less than 2-1/2 percent of the specified outside diameter is determined by multiplying the applicable tolerance in columns 3 and 4 as follows:

2% to 2-1/2% excl. -- 1.5 x tolerance
1-1/2% to 2% excl. -- 2.0 x tolerance
1% to 1-1/2% excl. -- 3.0 x tolerance

^d Example: The width tolerance of 1 x 3 inch rectangular tube is plus and minus .008 inch and the depth tolerance is plus and minus .012 inch.

^e Equivalent round diameter is the diameter of the circle having a circumference equal to the perimeter of the tube.

^f When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other-than-round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three.

ANSI H35.2 (cont)

SECTION 11. DRAWN TUBE (cont)

Table 11.5 • WALL THICKNESS ROUND AND OTHER-THAN-ROUND TUBE

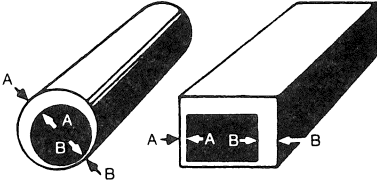
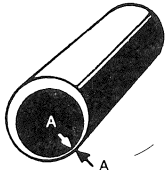
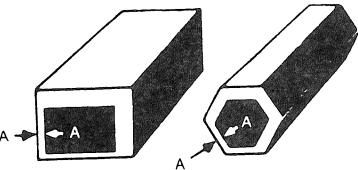
Specified Thickness ^d Inch	Tolerance ^{a,b} -- Inch Plus and Minus		
	Allowable Deviation of Mean ^c Wall Thickness from Specified Wall Thickness	Allowable Deviation of Wall Thickness At Any Point from Specified Wall Thickness (Eccentricity)	
		Round, Non-heat-treatable Alloys ^e 	Round, Heat-treatable Alloys and Other-than-round, All Alloys 
Col. 1	Col. 2	Col. 3	Col. 4
.010 - .035 .036 - .049 .050 - .083 .084 - .120	.002 .003 .004 .005	.002 .003 .004 .006	Plus and Minus 10% of Specified Wall Thickness, Minimum $\pm .003$
.121-.203 .204-.300 .301-.375 .376-.500	.006 .008 .015 .020	.008 .012 .020 .030	

Table 11.6 • STRAIGHTNESS

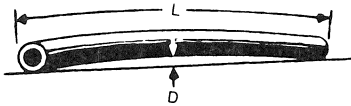
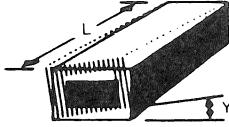
Specified Outside Diameter or Width Inch	Tolerance ^{f,g} -- Inch	
	Allowable Deviation from Straight	
		
	In any Foot or Less of Length	In Total Length of Piece
.374 & under .375 - 5.999 6.000 & over	.500 .010 .020	.500 ^h x Length, Feet .010 x Length, Feet .020 x Length, Feet

Table 11.7 • TWIST

Specified Width Inch	Tolerance ^g -- Degrees	
	Allowable Deviation from Straight	
		
	In any Foot or Less of Length	In Total Length of Piece
1.499 & under 1.500 - 2.999 3.000 & over	1.000 .500 .250	1.000 x Length, Feet, 7° Max .500 x Length, Feet, 5° Max .250 x Length, Feet, 3° Max

^a When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other-than-round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three.

^b When both a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^c The mean wall thickness of round tube is the average of two measurements taken opposite each other. The mean wall thickness of the other-than-round tube is the average of the two measurements taken opposite each other at approximate center line of tube and perpendicular to the longitudinal axis of the cross section.

^d When dimensions specified are outside and inside, rather than wall thickness itself, allowable deviation at any point (eccentricity) is plus and minus 10 percent of the mean wall thickness but not less than $\pm .003$ inch.

^e For coiled tube, values in Column 4 apply.

^f Tolerance is applicable when weight of tube on flat surface minimizes deviation.

^g Not applicable to annealed (0 temper) tube.

^h Not applicable to length under 10 feet.

ANSI H35.2 (cont)

SECTION 11. DRAWN TUBE (cont)

Table 11.8 • LENGTH

Specified Outside Diameter or Width	Tolerance -- Inch Plus Except as Noted							
	Allowable Deviation from Specified Length							
	Straight				Coiled			
	Specified Length -- Foot							
Inch	Up thru 12	Over 12 thru 30	Over 30 thru 50	Over 50	Up thru 100	Over 100 thru 250	Over 250 thru 500	500 and Over
.249 & under	.250	.375	.500		+ 5%, -0%	± 10%	± 15%	± 20%
.250 - 1.249	.125	.250	.375	1.000	+ 5%, -0%	± 10%	± 15%	± 20%
1.250 - 2.999	.125	.250	.375	1.000				
3.000 - 7.999	.1875	.3125	.4375	1.000				
8.000 & over	.250	.375	.500	1.000				

Table 11.9 • FLATNESS (Flat Surfaces)
OTHER-THAN-ROUND TUBE

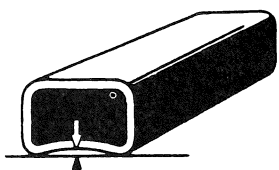
Specified Width or Depth Inch	Tolerance ^a -- Inch
	Allowable Deviation from Flat
	 Maximum Allowable Distance Y
.500 & under	.003
.501 - 1.000	.004
1.001 - 2.000	.005
2.001 - 3.000	.006
3.001 - 5.000	.008
5.001 - 6.000	.010
6.001 - 8.000	.015
8.001 - 10.000	.020
10.001 - 12.000	.025

Table 11.10 • SQUARENESS OF CUT ENDS

Allowable Deviation from Square: 1 Degree.

Table 11.11 • ANGULARITY

Allowable Deviation from Specified Angle: ± 2 Degrees.

Table 11.12 • SURFACE ROUGHNESS
DRAWN TUBE^b

Depth of surface imperfections shall not exceed 10% of the specified (or nominal) wall thickness or .005 inch, whichever is smaller.

Table 11.13 • DENTS DRAWN TUBE

Depth of dents shall not exceed twice the applicable ovality tolerance (Table 11.1) for the particular tube size being measured, except for tube having a wall thickness less than 2-1/2 percent of the outside diameter in which case the following multipliers apply:

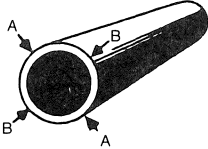
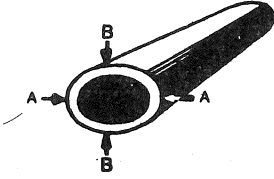
2% to 2-1/2%, Exclusive - 2.5 x Tolerance (Maximum)
 1-1/2% to 2%, Exclusive - 3.0 x Tolerance (Maximum)
 1% to 1-1/2%, Exclusive - 4.0 Tolerance (Maximum)

^a Not applicable to annealed (0 temper) tube, coiled tube, or tube having a wall thickness less than .020 inch or less than 2-1/2 percent of the round diameter. Equivalent round diameter is the diameter of a circle having a circumference equal to the perimeter of the tube.^b Not applicable to annealed (0 temper) tube.

ANSI H35.2 (cont)

SECTION 12 EXTRUDED TUBE

TABLE 12.1 • DIAMETER ROUND TUBE EXCEPT FOR T3510, T4510, T6510, T73510, T76510 AND T8510 TEMPER^a

Specified Diameter ^e Inch	Tolerance ^b —Inch Plus and Minus			
	Allowable Deviation of Mean Diameter ^c from Specified Diameter (Size)		Allowable Deviation of Diameter at any Point from Specified Diameter ^d	
	 Difference Between 1/2 (AA + BB) and Specified Diameter		 Difference Between AA or BB and Specified Diameter	
	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys
.500 - .999	.015	.010	.030	.020
1.000 - 1.999	.018	.012	.038	.025
2.000 - 3.999	.023	.015	.045	.030
4.000 - 5.999	.038	.025	.075	.050
6.000 - 7.999	.053	.035	.113	.075
8.000 - 9.999	.068	.045	.150	.100
10.000 - 11.999	.083	.055	.188	.125
12.000 - 13.999	.098	.065	.225	.150
14.000 - 15.999	.113	.075	.263	.175
16.000 - 17.999	.128	.085	.300	.200

^a Tolerances for T3510, T4510, T6510, T73510, T76510, and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.

^b When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^c Mean diameter is the average of two diameter measurements taken at right angles to each other at any point along the length.

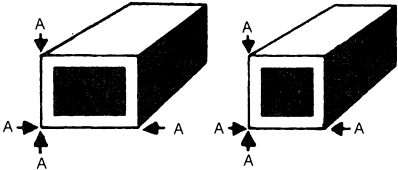
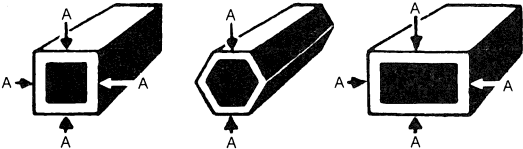
^d Not applicable in the annealed (O) temper or if wall thickness is less than 2-1/2 percent of the outside diameter or equivalent round diameter. The equivalent round diameter is the diameter of a circle having a circumference equal to the perimeter of the tube.

^e When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other than round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three. When both outside and inside diameters or inside diameter and wall thickness are specified, the tolerance applicable to the specified or calculated O.D. dimension shall also apply to the I.D. dimension.

ANSI H35.2 (cont)

SECTION 12 EXTRUDED TUBE (cont)

TABLE 12.2 • WIDTH and DEPTH SQUARE, RECTANGULAR, HEXAGONAL, OCTAGONAL TUBE EXCEPT FOR T3510, T4510 T6510, T73510, T76510 AND T8510 TEMPER^a

Specified Width or Depth ^d Inch	Tolerance ^b —Inch Plus and Minus				
	Allowable Deviation of Width or Depth at Corners from Specified Width or Depth		Allowable Deviation of Width or Depth Not at Corners from Specified Width or Depth ^c		
					
	Difference Between AA and Specified Width or Depth		Difference Between AA and Specified Width, Depth, or Distance Across Flats		
	Square, Rectangular		Square Hexagonal, Octagonal		Rectangular
	Alloys 5083, 5086, 5456	Other Alloys	Alloys 5083, 5086, 5456	Other Alloys	All Alloys
.500 - .749	.018	.012	.030	.020	<p>The tolerance for the width is the value in the previous column for a dimension equal to the depth, and conversely, but in no case is the tolerance less than at the corners.</p> <p>Example: The width tolerance of a 1 x 3 inch allow 6061 rectangular tube is $\pm .025$ inch and the depth tolerance $\pm .035$ inch.</p>
.750 - .999	.021	.014	.030	.020	
1.000 - 1.999	.027	.018	.038	.025	
2.000 - 3.999	.038	.025	.053	.035	
4.000 - 4.999	.053	.035	.068	.045	
5.000-5.999	.068	.045	.083	.055	
6.000-6.999	.083	.055	.098	.065	
7.000-7.999	.098	.065	.108	.075	
8.000-8.999	.113	.075	.123	.085	
9.000-9.999	.128	.085	.143	.095	
10.000-10.999	.143	.095	.158	.105	
11.000-12.999	.158	.105	.173	.115	

^a Tolerances for T3510, T4510, T6510, T73510, T76510, and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.

^b When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

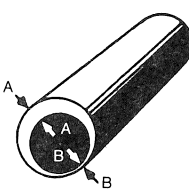
^c Not applicable in the annealed (O) temper or if wall thickness is less than 2-1/2 percent of the outside diameter or equivalent round diameter. The equivalent round diameter is the diameter of a circle having a circumference equal to the perimeter of the tube.

^d When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other than round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three. When both outside and inside diameters or inside diameter and wall thickness are specified, the tolerance applicable to the specified or calculated O.D. dimension shall also apply to the I.D. dimension.

ANSI H35.2 (cont)

SECTION 12 EXTRUDED TUBE (cont)

TABLE 12.3 • WALL THICKNESS ROUND TUBE

Specified Wall Thickness ^d Inch	Tolerance ^{a,b} —Inch Plus and Minus									Allowable Deviation of Wall Thickness at Any Point from Mean Wall Thickness ^c (Eccentricity)  Difference Between AA and Mean Wall Thickness
	Allowable Deviation of Mean Wall Thickness ^c from Specified Wall Thickness									
	Difference Between 1/2 (AA + BB) and Specified Wall Thickness									
	Outside Diameter—Inch									
	Under 1.250		1.250 - 2.999		3.000 - 4.999		5.000 and Over		All Alloys	
Alloys 5083, 5086,5456	Other Alloys	Alloys 5083, 5086,5456	Other Alloys	Alloys 5083, 5086,5456	Other Alloys	Alloys 5083, 5086,5456	Other Alloys			
Under .047	.009	.006							Plus and Minus 10% of Mean Wall Thickness	
.047 - .061	.011	.007								
.062 - .077	.012	.008	.012	.008	.012	.008	.015	.010		
.078 - .124	.014	.009	.014	.009	.015	.010	.023	.015		
.125 - .249	.014	.009	.014	.009	.020	.013	.030	.020		
.250 - .374	.017	.011	.017	.011	.024	.016	.038	.025	Max ± .060 Min ± .010	
.375 - .499			.023	.015	.032	.021	.053	.035		
.500 - .749			.030	.020	.042	.028	.068	.045		
.750 - .999					.053	.035	.083	.055		
1.000 - 1.499					.068	.045	.098	.065		
1.500 - 2.000							.113	.075	± .120	
2.001 - 2.499							.128	.085		
2.500 - 2.999							.143	.095		
3.000 - 3.499							.158	.105		
3.500 - 4.000							.173	.115		

^a When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other than round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three. When both outside and inside diameters or inside diameter and wall thickness are specified, the tolerance applicable to the specified or calculated O.D. dimension shall also apply to the I.D. dimension.

^b When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

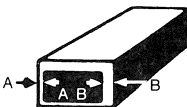
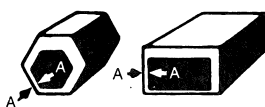
^c The mean wall thickness of round tube is the average of two measurements taken opposite each other. The mean wall thickness of other-than-round tube is the average of two measurements taken opposite each other at approximate center line of tube and perpendicular to the longitudinal axis of the cross section.

^d When dimensions specified are outside and inside, rather than wall thickness itself, allowable deviation at any point (eccentricity) applies to mean wall thickness.

ANSI H35.2 (cont)

SECTION 12 EXTRUDED TUBE (cont)

TABLE 12.4 • WALL THICKNESS OTHER-THAN-ROUND TUBE

Specified Wall Thickness ^d Inch	Tolerance ^{a,b} —Inch Plus and Minus					
	Allowable Deviation of Mean Wall Thickness ^c from Specified Wall Thickness				Allowable Deviation of Wall Thickness at Any Point from Mean Wall Thickness ^c (Eccentricity)	
						
	Difference Between 1/2 (AA + BB) and Specified Wall Thickness				Difference Between AA and Mean Wall Thickness	
	Circumscribing Circle Diameter ^e —Inch					
	Under 5.000		5.000 and Over		Under 5.000	5.000 and Over
	Alloys 5083, 5086,5456	Other Alloys	Alloys 5083, 5086,5456	Other Alloys	All Alloys	All Alloys
Under .047	.008	.005	.012	.008	.005	Plus and Minus 10% of Mean Wall Thickness
.047 - .061	.009	.006	.014	.009	.007	
.062 - .124	.011	.007	.015	.010	.010	
.125 - .249	.012	.008	.023	.015	.015	
.250 - .374	.017	.011	.030	.020	.025	
.375 - 0.499	.021	.014	.045	.030	.030	Maximum ± .060 Minimum ± .010
.500 - 0.749	.038	.025	.060	.040	.040	
.750 - 0.999	.053	.035	.075	.050	.050	
1.000 - 1.499	.068	.045	.090	.060	.060	
1.500 - 2.000			.105	.070		

^a When outside diameter, inside diameter, and wall thickness (or their equivalent dimensions in other than round tube) are all specified, standard tolerances are applicable to any two of these dimensions, but not to all three. When both outside and inside diameters or inside diameter and wall thickness are specified, the tolerance applicable to the specified or calculated O.D. dimension shall also apply to the I.D. dimension.

^b When a dimension tolerance is specified other than as an equal bilateral tolerance, the value of the standard tolerance is that which would apply to the mean of the maximum and minimum dimensions permissible under the tolerance.

^c The mean wall thickness of round tube is the average of two measurements taken opposite each other. The mean wall thickness of other-than-round tube is the average of two measurements taken opposite each other at approximate center line of tube and perpendicular to the longitudinal axis of the cross section.

^d When dimensions specified are outside and inside, rather than wall thickness itself, allowable deviation at any point (eccentricity) applies to mean wall thickness.

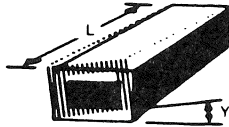
ANSI H35.2 (cont)

SECTION 12 EXTRUDED TUBE (cont)

TABLE 12.5 • LENGTH

Specified Outside Diameter or Width Inch	Tolerance – Inch Plus Except as Noted							
	Allowable Deviation from Specified Length							
	Straight				Coiled			
	Specified Length – Foot							
	Up thru 12	Over 12 thru 30	Over 30 thru 50	Over 50	Up Thru 100	Over 100 to 250	250 to 500	500 and Over
.500 - 1.249	.125	.250	.375	1.000	+ 5%, -0%	± 10%	± 15%	± 20%
1.250 - 2.999	.125	.250	.375	1.000				
3.000 - 7.999	.1875	.3125	.4375	1.000				
8.000 and Over	.250	.375	.500	1.000				

TABLE 12.6 • TWIST^a OTHER-THAN-ROUND TUBE

Temper	Specified Width Inch	Specified Thickness Inch	Tolerance ^b —Degrees
			Allowable Deviation from Straight
			 Y (Max) in Degrees
			In Total Length or in any Segment of One Foot or More of Total Length
All Except 0, TX510, TX511 ^c	.500 thru 1.499 1.500 - 2.999 3.000 and Over	All All All	1.000 x Length, Feet, 7° Maximum .500 x Length, Feet, 5° Maximum .250 x Length, Feet, 3° Maximum
TX510 ^c	.500 and Over	.095 and Over	d
TX511 ^c	.500 - 1.499 1.500 - 2.999 3.000 and Over	.095 and Over .095 and Over .095 and Over	1.000 x Length, Feet, 7° Maximum .500 x Length, Feet, 5° Maximum .250 x Length, Feet, 3° Maximum

^a Twist is normally measured by placing the extruded section on a flat surface and measuring the maximum distance at any point along its length between the bottom surface of the section and the flat surface. From this measurement, the deviation from true straightness of the section is subtracted. The remainder is the twist. To convert the standard twist tolerance (degrees) to an equivalent linear value, the tangent of the standard tolerance is multiplied by the width of the surface of the section that is on the flat surface.

^b When weight of piece on flat surface minimizes deviation.

^c TX510 and TX511 are general designations for the following stress-relieved tempers: T3510, T4510, T6510, T8510, T73510, T76510, and T3511, T4511, T6511, T8511, T73511, T76511 respectively.

^d Tolerances for T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.

ANSI H35.2 (cont)

SECTION 12 EXTRUDED TUBE (cont)

TABLE 12.7 • STRAIGHTNESS
TUBE IN STRAIGHT LENGTHS

Temper	Specified Outside Diameter or Width Inch	Tolerance ^{a,b} —Inch
		Allowable Deviation (D) from Straight
		In Total Length or in any Segment of One Foot or More of Total Length
All Except 0, TX510 ^c	.500 - 5.999	.010 x Measured Length, Feet
	6.000 and Over	.020 x Measured Length, Feet
TX510 ^c	.500 and Over	^d

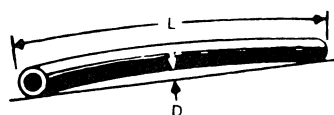
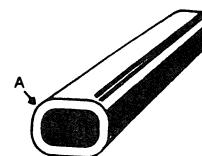


TABLE 12.10 • CORNER AND FILLET RADII

Specified Radius Inch	Tolerance—Inch
	Allowable Deviation From Specified Radius
Sharp Corners Up thru .187 .188 and Over	
	+ .0156
	± .0156 ± 10%

TABLE 12.8 • FLATNESS (Flat Surfaces)
EXCEPT FOR 0, T3510, T4510, T6510, T73510, T76510 AND T8510 TEMPER^d

Minimum Thickness of Metal Forming the Surface Inch	Tolerance—Inch	
	Maximum Allowable Deviation Y	
	Width Up Thru 1 Inch or Any 1 Inch Increment of Wider Surfaces	Width Over 1 Inch thru 5.999 Inches
Up thru .187 .188 and Over	.006 .004	.006 x W .004 x W

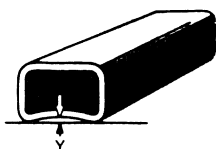


TABLE 12.11 • ANGULARITY

Allowable Deviation from Specified Angle: ± 2 Degrees

TABLE 12.12 • SURFACE ROUGHNESS
EXTRUDED TUBE^{e,f}

Specified Wall Thickness Inch	Allowable Depth of Defects Inch Maximum
Up thru .063	.0025
.064 - .125	.003
.126 - .188	.0035
.189 - .250	.004
.251 - .500	.005
.501 and Over	.008

TABLE 12.13 • DENTS EXTRUDED TUBE^g

Depth of dents shall not exceed twice the applicable ovality tolerance (Table 12.1) for the particular tube size being measured, except for tube having a wall thickness less than 2-1/2 percent of the outside diameter in which case the following multipliers apply:

2% to 2-1/2%, Exclusive - 2.5 x Tolerance (Maximum)
1-1/2% to 2%, Exclusive - 3.0 x Tolerance (Maximum)
1% to 1-1/2%, Exclusive - 4.0 x Tolerance (Maximum)

TABLE 12.9 • SQUARENESS OF CUT ENDS

Allowable Deviation from Square: 1 Degree.

^a When weight of piece on flat surface minimizes deviation.^b Not applicable to TX510 or TX511 temper tube having a wall thickness less than .095 inch.^c TX510 and TX511 are general designations for the following stress-relieved tempers: T3510, T4510, T6510, T8510, T73510, T76510, and T3511, T4511, T6511, T8511, T73511, T76511 respectively.^d Tolerances for T3510, T4510, T6510, T73510, T76510 and T8510 tempers shall be as agreed upon between purchaser and vendor at the time the contract or order is entered.^e Not applicable to tubes over 12.750 O.D.^f Not applicable to 2219 alloy tube. Most tubes in 2219 alloy will have die lines about twice the depth shown in the table, however for each tube size the supplier should be contacted for the roughness value to apply.^g Not applicable to annealed (0 temper) tube.

SEGMENTS FROM ASTM B248^a

WROUGHT COPPER ALLOY

PLATE, SHEET, STRIP & ROLLED BAR

TOLERANCES

THICKNESS TOLERANCES

(Applicable to Specifications B36, B121, B152, B291 and B465)

Thickness Tolerances, Plus and Minus, Inch

Thickness, Inch	Strip				Sheet			
	8 Inch and Under in Width	Over 8 to 12 Inch Incl, in Width	Over 12 to 14 Inch Incl, in Width	Over 14 to 20 Inch Incl, in Width	Over 20 to 28 Inch Incl, in Width	Over 28 to 36 Inch Incl, in Width	Over 36 to 48 Inch Incl, in Width	Over 48 to 60 Inch Incl, in Width
.004 & under	.0003	.0006	.0006					
Over .004 to .006 Incl	.0004	.0008	.0008	.0013				
Over .006 to .009 Incl	.0006	.001	.001	.0015				
Over .009 to .013 Incl	.0008	.0013	.0013	.0018	.0025	.003	.0035	.004
Over .013 to .017 Incl	.001	.0015	.0015	.002	.0025	.003	.0035	.0045
Over .017 to .021 Incl	.0013	.0018	.0018	.002	.003	.0035	.004	.005
Over .021 to .026 Incl	.0015	.002	.002	.0025	.003	.0035	.004	.005
Over .026 to .037 Incl	.002	.002	.002	.0025	.0035	.004	.005	.006
Over .037 to .050 Incl	.002	.0025	.0025	.003	.004	.005	.006	.007
Over .050 to .073 Incl	.0025	.003	.003	.0035	.005	.006	.007	.008
Over .073 to .130 Incl	.003	.0035	.0035	.004	.006	.007	.008	.010
Over .130 to .188 Incl	.0035	.004	.004	.0045	.007	.008	.010	.012
Thickness, Inch	Rolled Bar				Plate			
	8 Inch and Under in Width	Over 8 to 12 Inch Incl, in Width	Over 12 to 14 Inch Incl, in Width	Over 14 to 20 Inch Incl, in Width	Over 20 to 28 Inch Incl, in Width	Over 28 to 36 Inch Incl, in Width	Over 36 to 48 Inch Incl, in Width	Over 48 to 60 Inch Incl, in Width
Over .188 to .205 Incl	.0035	.004	.004	.0045	.007	.008	.010	.012
Over .205 to .300 Incl	.004	.0045	.0045	.005	.009	.010	.012	.014
Over .300 to .500 Incl	.0045	.005	.005	.006	.012	.013	.015	.018
Over .500 to .750 Incl	.0055	.007	.007	.009	.015	.017	.019	.023
Over .750 to 1.000 Incl	.007	.009	.009	.011	.018	.021	.024	.029
Over 1.000 to 1.500 Incl	.022	.022	.022	.022	.022	.025	.029	.036
Over 1.500 to 2.000 Incl	.026	.026	.026	.026	.026	.030	.036	.044

THICKNESS TOLERANCES

(Applicable to Specifications B96, B103, B122, B169, B194, B422, B534)

Thickness Tolerances, Plus and Minus, Inch

Thickness, Inch	Strip				Sheet			
	8 Inch and Under in Width	Over 8 to 12 Inch Incl, in Width	Over 12 to 14 Inch Incl, in Width	Over 14 to 20 Inch Incl, in Width	Over 20 to 28 Inch Incl, in Width	Over 28 to 36 Inch Incl, in Width	Over 36 to 48 Inch Incl, in Width	Over 48 to 60 Inch Incl, in Width
.004 & under	.0004	.0008	.0008					
Over .004 to .006 Incl	.0006	.001	.001	.0015				
Over .006 to .009 Incl	.0008	.0013	.0013	.002				
Over .009 to .013 Incl	.001	.0015	.0015	.0025				
Over .013 to .017 Incl	.0013	.002	.002	.0025				
Over .017 to .021 Incl	.0015	.0025	.0025	.003				
Over .021 to .026 Incl	.002	.0025	.0025	.003	.004	.005	.006	.007
Over .026 to .037 Incl	.0025	.003	.003	.0035	.005	.006	.007	.008
Over .037 to .050 Incl	.003	.0035	.0035	.004	.005	.006	.008	.010
Over .050 to .073 Incl	.0035	.004	.004	.0045	.007	.008	.010	.012
Over .073 to .130 Incl	.004	.0045	.0045	.005	.008	.010	.012	.014
Over .130 to .188 Incl	.0045	.005	.005	.006	.010	.012	.014	.016
Thickness, Inch	Rolled Bar				Plate			
	8 Inch and Under in Width	Over 8 to 12 Inch Incl, in Width	Over 12 to 14 Inch Incl, in Width	Over 14 to 20 Inch Incl, in Width	Over 20 to 28 Inch Incl, in Width	Over 28 to 36 Inch Incl, in Width	Over 36 to 48 Inch Incl, in Width	Over 48 to 60 Inch Incl, in Width
Over .188 to .205 Incl	.0045	.005	.005	.006	.010	.012	.014	.016
Over .205 to .300 Incl	.005	.006	.006	.007	.012	.014	.016	.018
Over .300 to .500 Incl	.006	.007	.007	.008	.015	.017	.019	.023
Over .500 to .750 Incl	.008	.010	.010	.012	.019	.021	.024	.029
Over .750 to 1.000 Incl	.010	.012	.012	.015	.023	.026	.030	.037
Over 1.000 to 1.500 Incl	.028	.028	.028	.028	.028	.032	.037	.045
Over 1.500 to 2.000 Incl	.033	.033	.033	.033	.033	.038	.045	.055

SPECIAL THICKNESS TOLERANCES

Thickness, Inch	Tolerance Applicable to Alloy 725 Specification B122 Tolerances, Plus and Minus, Inch for Strip 8 Inch and Under in Width	Tolerances Applicable to Specifications B194 and B534 Tolerances, Plus and Minus, Inch for Strip 4 Inch and Under in Width
.004 & under	.0002	.0002
Over .004 to .006, Incl	.0003	.0003
Over .006 to .009, Incl	.0004	.0005
Over .009 to .013, Incl	.0005	.0006
Over .013 to .017, Incl	.0007	.0007
Over .017 to .021, Incl	.0008	.0008
Over .021 to .026, Incl	.001	.001
Over .026 to .032, Incl	.0013	.001
Over .032 to .050, Incl	.0015	

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

SEGMENTS FROM ASTM B248 (cont)

WROUGHT COPPER ALLOY (cont)

PLATE, SHEET, STRIP & ROLLED BAR (cont)

TOLERANCES

WIDTH TOLERANCES FOR SLIT METAL AND SLIT METAL WITH ROLLED EDGES

(Applicable to all Specifications Listed Below)

Width, Inch	Width Tolerances, Plus and Minus			
	For Thicknesses .004 to .032 Inch, Incl	For Thicknesses .032 to .125 Inch, Incl	For Thicknesses .125 to .188 Inch, Incl	For Thicknesses .188 to .500 Inch, Incl
2 & under	.005	.010	.012	.015
Over 2 to 8, Incl	.008	.013	.015	.015
Over 8 to 24, Incl	.015	.015	.015	.031
Over 24 to 40, Incl	.031	.031	.031	.046

WIDTH TOLERANCES FOR SQUARE SHEARED METAL (Applicable to All Specifications Listed Below)

Width, Inch	Width Tolerances, Plus and Minus		
	For Thicknesses .062 and Under	For Thicknesses .062 to .125 Inch, Incl	For Thicknesses Over .125 Inch
20 & under	.031	.046	.062
Over 20 to 36, Incl	.046	.046	.062
Over 36 to 120, Incl	.062	.062	.062

WIDTH TOLERANCES FOR SAWED METAL (Applicable to all Specifications Listed Below)

Width, Inch	Width Tolerances, Plus and Minus		
	For Lengths up to 10 Feet, Incl		For Lengths Over 10 Feet
	For Thicknesses Up to 1.500 Inch, Incl	For Thicknesses Over 1.500 Inch, Incl	All Thicknesses
Up to 12, Incl	.031	.062	.062
Over 12 to 120, Incl	.062	.062	.062

LENGTH TOLERANCES FOR STRAIGHT LENGTHS (Applicable to all Specifications Listed Below)

Length, Foot	Length Tolerances
	Inch
Specific Lengths, Mill Lengths, Multiple Lengths, and Specific Lengths With Ends	
10 & under	.250
Over 10 to 20, Incl	.500
Stock Lengths and Stock Lengths With Ends	1.000

SCHEDULE OF MINIMUM LENGTH AND MAXIMUM WEIGHT OF ENDS FOR MILL LENGTHS, SPECIFIC LENGTHS WITH ENDS AND STOCK LENGTH WITH ENDS (Applicable to all Specifications Listed Below)

Nominal Length, Foot	.050 Inch and Under in Thickness		Over .050 to .125 Inch Incl, in Thickness		Over .125 to .250 Inch Incl, in Thickness	
	Minimum Length of Shortest Piece, Foot	Maximum Permissible Weight of Ends Percent of Lot Weight	Minimum Length of Shortest Piece, Foot	Maximum Permissible Weight of Ends Percent of Lot Weight	Minimum Length of Shortest Piece, Foot	Maximum Permissible Weight of Ends Percent of Lot Weight
6 to 8, Incl	4	20	4	25	3	30
8 to 10, Incl	6	25	5	30	4	35
10 to 14, Incl	7	30	6	35	5	40

ASTM B248 Specifications:

B36, Brass Plate, Sheet, Strip and Rolled Bar
B97, Copper Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes
B103, Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar
B121, Lead Brass Plate, Sheet, Strip, and Rolled Bar
B122, Copper-Nickel-Zinc Alloy (Nickel Silver) and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar
B152, Copper Sheet, Strip, Plate and Rolled Bar
B169, Aluminum Bronze Plate, Sheet, Strip, and Rolled Bar
B194, Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar
B291, Copper-Zinc-Manganese Alloy (Manganese Brass)
B422, Copper-Nickel-Silicon Alloy Sheet and Strip
B465, Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar
B534, Copper-Cobalt-Beryllium Alloy (Copper Alloy No. 175) Plate, Sheet, Strip and, Rolled Bar
B591, Copper-Zinc-Tin Alloys, Plate, Sheet, Strip, and Rolled Bar
B592, Copper-Zinc-Aluminum-Cobalt Alloy, Plate, Sheet, Strip, and Rolled Bar

SEGMENTS FROM ASTM B248 (cont)

WROUGHT COPPER ALLOY (cont)

PLATE, SHEET, STRIP & ROLLED BAR (cont)

TOLERANCES

LENGTH TOLERANCES FOR SQUARE-SHEARED METAL IN ALL WIDTHS 120 INCHES AND UNDER (Applicable to all Specifications Listed Below)

Length, Inch	Length Tolerance, Plus and Minus		
	For Thicknesses Up to .062 Inch, Incl	For Thicknesses Over .062 to .125 Inch, Incl	For Thicknesses Over .125 Inch
20 & under	.031	.046	.062
Over 20 to 36, Incl	.046	.046	.062
Over 36 to 120, Incl	.062	.062	.062

LENGTH TOLERANCES FOR SAWED METAL (Applicable to all Specifications Listed Below)

Width, Inch	Length Tolerance, Inch
Up to 120, Incl	.250

STRAIGHTNESS TOLERANCES FOR SLIT METAL OR SLIT METAL EITHER STRAIGHTENED OR EDGE-ROLLED (Applicable to all Specifications Listed Below)

Width, Inch	Straightness Tolerance		
	As Slit Only		As Slit and Either Straightened or Edge Rolled
	Shipped in Rolls, Inch	Fhipped Flat, Inch	Shipped Flat, in Rolls, or on Bucks, Inch
Over .250 to .375, Incl	2.000	1.500	.500
Over .375 to .250, Incl	1.500	1.000	.500
Over .500 to 1.000, Incl	1.000	.750	.500
Over 1.000 to 2.000, Incl	.650	.625	.375
Over 2.000 to 4.000, Incl	.500	.500	.375
Over 4	.375	.375	.375

STRAIGHTNESS TOLERANCES FOR SQUARE-SHEARED METAL (Applicable to all Specifications Listed Below)

Thickness, Inch	Straightness Tolerance	
	Up to 10 Inch, Incl, in Width	Over 10 Inch, in Width
.125 & under	.062	.031
Over .125 to .187, Incl	.125	.046
Over .187	.125	.062

STRAIGHTNESS TOLERANCE FOR SAWED METAL (Applicable to all Specifications Listed Below)

Width, Inch	Straightness Tolerances, Inch
3.000 & under	.062
Over 3.000	.046

ASTM B248 Specifications:

B36, Brass Plate, Sheet, Strip and Rolled Bar
 B97, Copper Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes
 B103, Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar
 B121, Leaded Brass Plate, Sheet, Strip, and Rolled Bar
 B122, Copper-Nickel-Zinc Alloy (Nickel Silver) and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar
 B152, Copper Sheet, Strip, Plate and Rolled Bar
 B169, Aluminum Bronze Plate, Sheet, Strip, and Rolled Bar
 B194, Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar
 B291, Copper-Zinc-Manganese Alloy (Manganese Brass)
 B422, Copper-Nickel-Silicon Alloy Sheet and Strip
 B465, Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar
 B534, Copper-Cobalt-Beryllium Alloy (Copper Alloy No. 175) Plate, Sheet, Strip and, Rolled Bar
 B591, Copper-Zinc-Tin Alloys, Plate, Sheet, Strip, and Rolled Bar
 B592, Copper-Zinc-Aluminum-Cobalt Alloy, Plate, Sheet, Strip, and Rolled Bar

SEGMENTS FROM ASTM B248 (cont) **WROUGHT COPPER ALLOY (cont)** **PLATE, SHEET, STRIP & ROLLED BAR (cont)**

TOLERANCES

LOT WEIGHT TOLERANCES FOR HOT-ROLLED SHEET AND PLATE (Applicable to Specification B97 [Copper Alloys No. 655] and B152)

Thickness, Inch	Weight Tolerances, Plus and Minus, Percentage of Theoretical Weight				
	48 Inch and Under, in Width	Over 48 to 60 Inch, Incl, in Width	Over 60 to 72 Inch, Incl, in Width	Over 72 to 90 Inch, Incl, in Width	Over 90 to 110 Inch, Incl, in Width
.125 & under	8	9.5	11	12.5	14
Over .125 to .187, Incl	6.5	8	9.5	11	12.5
Over .187 to .250, Incl	6	7.5	8.5	9	10
Over .250 to .312, Incl	5.5	7	8	8.5	9
Over .312 to .375, Incl	5	6	7	7.5	8
Over .375 to .437, Incl	4.5	5	6	7	7.5
Over .437 to .500, Incl	4	4.5	5.5	6	6.5
Over .500 to .625, Incl	3.5	4.5	5	5.5	6
Over .625 to .750, Incl	3	4	4.5	5	5.5
Over .750 to 1.000, Incl	2.75	3.5	4	4.5	5
Over 1.000 to 1.500, Incl	2.5	3	3.5	4	4.5
Over 1.500 to 2.000, Incl	2.25	2.75	3.25	3.75	4.25

TOLERANCES FOR RADIUS OF COMMERCIAL SQUARE CORNERS OF ROLLED OR DRAWN EDGES WITH SQUARE CORNERS
(Applicable to all Specifications Listed Below)

Thickness, Inch	Permissible Radius of Corners, Maximum, Inch
.032 to .064, Incl	.010
Over .064 to .188, Incl	.016
Over .188 to 1.000, Incl	.031

TOLERANCES FOR RADIUS ON CORNERS ROLLED OR DRAWN EDGES WITH ROUNDED CORNERS
(Applicable to all Specifications Listed Below)

Thickness, Inch	Radius of Corners, Inch	
	Minimum	Maximum
Over .125 to .188, Incl	.016	.048
Over .188 to 1.000, Incl	.031	.094
Over 1.000 to 2.000, Incl	.063	.188

TOLERANCES FOR RADIUS OF ROLLED OR DRAWN ROUNDED EDGES (Applicable to all Specifications Listed Below)

Thickness, Inch	Radius of Edges, Thickness	
	Minimum	Maximum
Up to .188, Incl	.750	1.750
Over .188	1.000	1.500

TOLERANCES FOR RADIUS OF ROLLED OR DRAWN FULL-ROUNDED EDGES (Applicable to all Specifications Listed Below)

Thickness, Inch	Radius of Edges, Thickness	
	Minimum	Maximum
All Thicknesses	.500	.750

ASTM B248 Specifications:

B36, Brass Plate, Sheet, Strip and Rolled Bar
B97, Copper Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes
B103, Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar
B121, Lead Brass Plate, Sheet, Strip, and Rolled Bar
B122, Copper-Nickel-Zinc Alloy (Nickel Silver) and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar
B152, Copper Sheet, Strip, Plate and Rolled Bar
B169, Aluminum Bronze Plate, Sheet, Strip, and Rolled Bar
B194, Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar
B291, Copper-Zinc-Manganese Alloy (Manganese Brass)
B422, Copper-Nickel-Silicon Alloy Sheet and Strip
B465, Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar
B534, Copper-Cobalt-Beryllium Alloy (Copper Alloy No. 175) Plate, Sheet, Strip and, Rolled Bar
B591, Copper-Zinc-Tin Alloys, Plate, Sheet, Strip, and Rolled Bar
B592, Copper-Zinc-Aluminum-Cobalt Alloy, Plate, Sheet, Strip, and Rolled Bar

SEGMENTS FROM ASTM B249^a

WROUGHT COPPER ALLOY

ROD, BAR & SHAPES

TOLERANCES

TOLERANCES FOR DIAMETER OR DISTANCE BETWEEN PARALLEL SURFACES OF COLD DRAWN ROD (Applicable to Specifications B16, B21, B98 [Copper Alloy UNS No. C65100], B133, B140, B301, and B453)

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, Plus and Minus, Inch	
	Rounds	Hexagons, Octagons
Up to .150, Incl	.0013	.0025
Over .150 to .500, Incl	.0015	.003
Over .500 to 1.000, Incl	.002	.004
Over 1.000 to 2.000, Incl	.0025	.005
Over 2.000	.150	.300

TOLERANCES FOR DIAMETER OR DISTANCE BETWEEN PARALLEL SURFACES OF COLD DRAWN ROD (Applicable to Specifications B98 [Copper Alloys UNS Nos. C65500, C65800 and C66100], B138, B139, B150, B151, B196, B371, B411, and B441)

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, Plus and Minus, Inch	
	Rounds	Hexagons, Octagons
Up to .150, Incl	.002	
Over .150 to .500, Incl	.002	.004
Over .500 to 1.000, Incl	.003	.005
Over 1.000 to 2.000, Incl	.004	.006
Over 2.000	.200	.400

DIAMETER TOLERANCES FOR PISTON-FINISH ROD (Applicable to Specifications B21, B138, B139, and B150)

Diameter, Inch	Tolerances, Plus and Minus, Inch
Over .500 to 1.000, Incl	.0013
Over 1.000 to 2.000, Incl	.0015
Over 2.000	.100

TOLERANCES FOR DIAMETER OR DISTANCE BETWEEN PARALLEL SURFACES OF AS-EXTRUDED ROD AND BAR (Applicable to Specifications B21, B124 [Copper Alloy UNS Nos. C37700, C46400, C48500, C63000, C63900, C64200, C64210, and C67500], B138 [Copper Alloy UNS No. C67500], and B150)

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, Plus and Minus, Inch	
	Rounds, Squares, Rectangles, Hexagons, Octagons	
Up to 1.000, Incl	.010	
Over 1.000 to 2.000, Incl	.015	
Over 2.000 to 3.000, Incl	.025	
Over 3.000 to 3.500, Incl	.035	
Over 3.500 to 4.000, Incl	.060	

TOLERANCES FOR DIAMETER OR DISTANCE BETWEEN PARALLEL SURFACES OF AS-EXTRUDED ROD AND BAR (Applicable to Specifications B98 [Copper Alloy UNS Nos. C65100, C65500, and C65800] and B124 [Copper Alloy UNS Nos. C11000, C14500, C14700, C65500, and C77400], and B138 [Copper Alloy UNS No. C67000])

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, Plus and Minus, Inch	
	Rounds, Squares, Rectangles, Hexagons, Octagons	
Up to 1.000, Incl	.020	
Over 1.000 to 2.000, Incl	.030	
Over 2.000 to 3.000, Incl	.050	
Over 3.000 to 3.500, Incl	.070	
Over 3.500 to 4.000, Incl	.120	

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

SEGMENTS FROM ASTM B249 (cont) **WROUGHT COPPER ALLOY (cont)** **ROD, BAR & SHAPES (cont)**

TOLERANCES

DIAMETER TOLERANCES FOR HOT-ROLLED ROUND ROD (Applicable to Specifications B98, B124, B138, B150, B196, and B441)

Diameter, Inch	Tolerances, Plus and Minus, Inch
.250 Only	+ .020 - .010
Over .250 to .750, Incl	.015
Over .750 to 1.250 Incl	.020
Over 1.250 to 1.500 Incl	.030
Over 1.500 to 3.000 Incl	.062
Over 3.000	.125

THICKNESS TOLERANCES FOR RECTANGULAR AND SQUARE BAR (Applicable to Specifications B133 and B301)

Thickness, Inch	Tolerances, Plus and Minus, Inch, For Widths Given in Inch					
	.500 and Under 1.250, Incl	Over .500 to 2.000, Incl	Over 1.250 to 4.000, Incl	Over 2.000 to 8.000, Incl	Over 4.000 to 12.000, Incl	Over 8.000 to
Over .188 to .500, Incl	.003	.003	.0035	.004	.0045	.0055
Over .500 to 1.000, Incl		.004	.004	.0045	.005	.006
Over 1.000 to 2.000, Incl		.0045	.0045	.005	.006	
Over 2.000 to 4.000, Incl				.300		

THICKNESS TOLERANCES FOR RECTANGULAR AND SQUARE BAR (Applicable to Specifications B16, B21, B98, [Copper Alloy UNS No. C65100], and B140)

Thickness, Inch	Tolerances, Plus and Minus, Inch, For Widths Given in Inch					
	.500 and Under 1.250, Incl	Over .500 to 2.000, Incl	Over 1.250 to 4.000, Incl	Over 2.000 to 8.000, Incl	Over 4.000 to 12.000, Incl	Over 8.000 to
Over .188 to .500, Incl	.0035	.004	.0045	.0045	.006	.008
Over .500 to 1.000, Incl		.0045	.005	.005	.007	.009
Over 1.000 to 2.000, Incl		.005	.005	.006	.008	
Over 2.000 to 4.000, Incl				.300		

THICKNESS TOLERANCES FOR RECTANGULAR AND SQUARE BAR (Applicable to Specifications B98 [Copper Alloy UNS Nos. C65500, C65800, and C66100], B138, B139, B150, B151, B196, B411, and B441)

Thickness, Inch	Tolerances, Plus and Minus, Inch, For Widths Given in Inch					
	.500 and Under 1.250, Incl	Over .500 to 2.000, Incl	Over 1.250 to 4.000, Incl	Over 2.000 to 8.000, Incl	Over 4.000 to 12.000, Incl	Over 8.000 to
Over .188 to .500, Incl	.005	.005	.006	.007	.009	.012
Over .500 to 1.000, Incl		.006	.007	.008	.010	.013
Over 1.000 to 2.000, Incl		.006	.007	.009	.011	
Over 2.000 to 4.000, Incl				.500		

WIDTH TOLERANCES FOR RECTANGULAR BAR (Applicable to Specifications B16, B21, B98 [Copper Alloy UNS No. C65100], B133, B140 and B301)

Width, Inch	Tolerances, Plus and Minus, Inch
Over .188 to .500, Incl	.0035
Over .500 to 1.250, Incl	.005
Over 1.250 to 2.000, Incl	.008
Over 2.000 to 4.000, Incl	.012
Over 4.000 to 12.000, Incl	.300

SEGMENTS FROM ASTM B249 (cont) **WROUGHT COPPER ALLOY (cont)** **ROD, BAR & SHAPES (cont)**

TOLERANCES

WIDTH TOLERANCES FOR RECTANGULAR BAR

(Applicable to Specifications B98 [Copper Alloy UNS Nos. C65500, C65800, and C66100], B138, B139, B150, B151, B196, B411, and B441)

Width, Inch	Tolerances, Plus and Minus, Inch
Over .188 to .500, Incl	.005
Over .500 to 1.250, Incl	.007
Over 1.250 to 2.000, Incl	.010
Over 2.000 to 4.000, Incl	.015
Over 4.000 to 12.000, Incl	.500

LENGTH TOLERANCES FOR ROD, BAR, AND SHAPES

(FULL-LENGTH PIECES SPECIFIC AND STOCK LENGTHS WITH OR WITHOUT ENDS)

(Applicable to Specifications B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, and B453)

Length Classification	Tolerances, All Plus, Inch (Applicable only to Full-Length Pieces)
Specific Lengths	.375
Specific Lengths With Ends	1.000
Stock Lengths With or Without Ends	1.000

SCHEDULE OF LENGTHS (SPECIFIC AND STOCK) WITH ENDS FOR ROD BAR

(Applicable to Specifications B16, B21, B133, B138 [Copper Alloy UNS No. C67500], B140, B301, and B453)

Diameter or Distance Between Parallel Surfaces for Round Hexagonal, and Octagonal Rod, and Square Bar, Inch	Rectangular Bar, Area, Inch	Nominal Length, Foot	Shortest Permissible Length, Percent of Nominal Length	Maximum Permissible Weight of Ends, Percent of Lot Weight
.500 and Under	.250 and Under	6 to 14, Incl	75	20
Over .500 to 1.000, Incl	Over .250 to 1.000, Incl	6 to 14, Incl	70	30
Over 1.000 to 1.500, Incl	Over 1.000 to 2.250, Incl	6 to 12, Incl	60	40
Over 1.500 to 2.000, Incl	Over 2.250 to 4.000, Incl	6 to 12, Incl	50	45
Over 2.000 to 3.000, Incl	Over 4.000 to 9.000, Incl	6 to 10, Incl	40	50

SCHEDULE OF LENGTHS (SPECIFIC AND STOCK) WITH ENDS FOR ROD AND BAR

(Applicable to Specifications B98, B138 [Copper Alloy UNS No. C67000], B139, B150, B151, B196, B371, B411, and B441)

Diameter or Distance Between Parallel Surfaces for Round Hexagonal, and Octagonal Rod, and Square Bar, Inch	Rectangular Bar, Area, Inch	Nominal Length, Foot	Shortest Permissible Length, Percent of Nominal Length	Maximum Permissible Weight of Ends, Percent of Lot Weight
.500 & under	.250 and Under	6 to 12, Incl	65	30
Over .500 to 1.000, Incl	Over .250 to 1.000, Incl	6 to 12, Incl	60	40
Over 1.000 to 1.500, Incl	Over 1.000 to 2.250, Incl	6 to 10, Incl	50	50
Over 1.500 to 2.000, Incl	Over 2.250 to 4.000, Incl	6 to 10, Incl	40	60

SEGMENTS FROM ASTM B249 (cont) **WROUGHT COPPER ALLOY (cont)** **ROD, BAR & SHAPES (cont)**

TOLERANCES

STRAIGHTNESS TOLERANCES FOR ROD, BAR AND SHAPES. (FOR GENERAL USE)
(Applicable to Specifications B16, B21, B98, B133, B138, B139, B140, B150, B151, B196, B301, B371, B411, B441, and B453)

Form and Size, Inch	Length, Foot	Maximum Curvature (Depth of Arc), Inch
Drawn Rod	2.000 & Under Over 2.000 to 5.000 Over 5.000 to 10.000 10.000 & Over	.031 .031 in Any 2-Foot Portion .125 in Any 5-Foot Portion .500 in Any 10-Foot Portion
Bar and Shapes (Rolled or Drawn)	6.000 & Over	.500 in Any 6-Foot Portion

DRAWN ROD. (FOR AUTOMATIC SCREW MACHINE USE)
(Applicable to Specifications B16, B140, B301, and B453)

Form and Size, Inch	Length, Foot	Maximum Curvature (Depth of Arc), Inch
Rounds Only: Under .250 .250 & Over	10.000 & Over 10.000 & Over	.500 in Any 10-Foot Portion .250 in Any 10-Foot Portion
Local Departure From Straightness, .250 & Over Only		.015 in Any 1-Foot Portion of the Total Length
Hexagons and Octagons: Under .250 .250 & Over	10.000 & Over 10.000 & Over	.500 in Any 10-Foot Portion .375 in Any 10-Foot Portion

STRAIGHTNESS TOLERANCES FOR SHAFTING
(Applicable to Specifications B21, B138, B139, and B150)

Length of Shaft, Foot	Maximum Permissible Departure From Straightness of Either Center or End Portions, Inch	Minimum Diameter Applicable For Length Indicated, Inch
Up to 6, Incl	.005	.500
Over 6 to 7	.007	.500
Over 7 to 8	.009	.500
Over 8 to 9	.012	.500
Over 9 to 10	.014	.500
Over 10 to 11	.017	.500
Over 11 to 12	.020	.500
Over 12 to 14	.028	.625
Over 14 to 16	.036	.750
Over 16 to 18	.045	1.000
Over 18 to 20	.055	1.250
Over 20 to 22	.068	1.500
Over 22 to 24	.078	1.750
Over 24 to 26	.094	2.000

DIAMETER TOLERANCES FOR HOT-FORGED ROD AND BAR
(Applicable to Specification B138)

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, all Plus, Inch	
	As-Forged	Rough-Turned
Over 3.500	.125	.050

SEGMENTS FROM ASTM B250^a

WROUGHT COPPER ALLOY

WIRE

TOLERANCES

TOLERANCES FOR DIAMETER OR DISTANCE BETWEEN PARALLEL SURFACES OF WIRE (Applicable for Specifications B16, B99 [Copper Alloy UNS No. C65100], and B134)

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, Plus and Minus, Inch	
	Rounds	Hexagons, Octagons
Up to .010, Incl	.0001	
Over .010 to .020, Incl	.0002	
Over .020 to .030, Incl	.0003	
Over .030 to .040, Incl	.0004	.0008
Over .040 to .050, Incl	.0005	.001
Over .050 to .060, Incl	.0006	.0012
Over .060 to .080, Incl	.0008	.0016
Over .080 to .150, Incl	.001	.002
Over .150 to .500, Incl	.0015	.003
Over .500 to .750, Incl	.002	.004

TOLERANCES FOR DIAMETER OR DISTANCE BETWEEN PARALLEL SURFACES OF WIRE (Applicable for Specifications B99 [Copper Alloy UNS No. C65500], and B159, B197, B206, and B412)

Diameter or Distance Between Parallel Surfaces, Inch	Tolerances, Plus and Minus, Inch	
	Rounds	Hexagons, Octagons
Up to .010, Incl	.0002	
Over .010 to .020, Incl	.0003	
Over .020 to .030, Incl	.0005	
Over .030 to .040, Incl	.0007	.002
Over .040 to .050, Incl	.0008	.003
Over .050 to .060, Incl	.001	.003
Over .060 to .080, Incl	.0015	.004
Over .080 to .150, Incl	.002	.004
Over .150 to .500, Incl	.002	.004
Over .500 to .750, Incl	.003	.005

THICKNESS TOLERANCES FOR FLAT (RECTANGULAR AND SQUARE) WIRE (Applicable for Specification B134)

Thickness, Inch	Tolerances, Plus and Minus, Inch For Widths Given in Inch	
	Up to .500, Incl	Over .500 to 1.250, Incl
Up to .013, Incl	.001	.0013
Over .013 to .050, Incl	.0013	.0015
Over .050 to .090, Incl	.0015	.002
Over .090 to .130, Incl	.002	.0025
Over .130 to .188, Incl	.003	.0035

THICKNESS TOLERANCES FOR FLAT (RECTANGULAR AND SQUARE) WIRE (Applicable for Specifications B159, B197, B206, and B412)

Thickness, Inch	Tolerances, Plus and Minus, Inch For Widths Given in Inch	
	Up to .500, Incl	Over .500 to 1.250, Incl
Up to .050, Incl	.0015	.002
Over .050 to .090, Incl	.002	.003
Over .090 to .130, Incl	.003	.004
Over .130 to .188, Incl	.004	.0045

WIDTH TOLERANCES FOR FLAT (RECTANGULAR) WIRE (Applicable for Specification B134)

Width, Inch	Tolerances, Plus and Minus, Inch
Up to .050, Incl	.0013
Over .050 to .090, Incl	.0015
Over .090 to .130, Incl	.002
Over .130 to .188, Incl	.003
Over .188 to .500, Incl	.0035
Over .500 to 1.250, Incl	.005

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

SEGMENTS FROM ASTM B250 (cont) **WROUGHT COPPER ALLOY (cont)** **WIRE (cont)**

TOLERANCES

WIDTH TOLERANCES FOR FLAT (RECTANGULAR) WIRE (Applicable for Specifications B159, B197, B206, and B412)

Width, Inch	Tolerances, Plus and Minus, Inch
Up to .050, Incl	.0015
Over .050 to .090, Incl	.002
Over .090 to .130, Incl	.003
Over .130 to .188, Incl	.004
Over .188 to .500, Incl	.005
Over .500 to 1.250, Incl	.007

LENGTH TOLERANCES FOR STRAIGHT LENGTHS (SPECIFIC AND STOCK) OR FLAT (RECTANGULAR AND SQUARE) WIRE (Applicable to Specifications B134, B159, B197, B206, and B412)

Lengths	Length Tolerances Applicable Only To Full Length Pieces, Inch ^a
Specific Lengths	.375
Specific Lengths With Ends	1.000
Stock Lengths With or Without Ends	1.000

SCHEDULE OF LENGTHS (SPECIFIC AND STOCK) WITH ENDS FOR FLAT (RECTANGULAR AND SQUARE) WIRE FURNISHED IN STRAIGHT LENGTHS (Applicable to Specifications B134, B159, B197, B206, and B412)

Shortest Permissible Length Nominal Length, Foot	Maximum Permissible Weight of Ends (In Percent of Nominal Length)	(In Percent of Lot Weight)
6 to 14, Incl	75	20

STRAIGHTNESS TOLERANCES FOR FLAT (RECTANGULAR AND SQUARE) WIRE (Applicable to Specifications B134, B159, B197, B206, and B412)

Applicable to Any Longitudinal Edge of Material Supplied in Nominally Flat Straight Lengths and in Rolls or on Bucks	
For Material Having Cross-sectional Area of .010 Inch and Over and a Thickness of .010 Inch and Over, Furnished in Straight Lengths, in Rolls or on Bucks.	.500 Inch Maximum Edgewise Curvature (Depth of Arc) in Any 6 Foot Portion of the Total Length.
For Material Having a Cross-sectional Area of Less Than .010 Inch, or a Thickness of Less Than .010 Inch, and All Material Furnished on Reels or on Stagger Wound Rolls.	No Straightness Tolerances Established.

^a Tolerances are all plus. If all minus tolerances are desired, use the same values. If tolerances plus and minus are desired, halve the values given. As stock lengths are cut and placed in stock in advance of orders, departure from this tolerance is not practicable.

SEGMENTS FROM ASTM B251^a

WROUGHT COPPER ALLOY

SEAMLESS TUBE

TOLERANCES

WALL THICKNESS TOLERANCES FOR COPPER AND COPPER-ALLOY TUBE

(Applicable to Specifications B68, B75, and B135)

Wall Thickness, Inch	Outside Diameter, Inch						
	Over .031 to .125, Incl	Over .125 to .625, Incl	Over .625 to 1, Incl	Over 1 to 2, Incl	Over 2 to 4, Incl	Over 4 to 7, Incl	Over 7 to 10, Incl
Up to .017, Incl	.002	.001	.0015	.002			
Over .017 to .024, Incl	.003	.002	.002	.0025			
Over .024 to .034, Incl	.003	.0025	.0025	.003	.004		
Over .034 to .057, Incl	.003	.003	.0035	.0035	.005	.007	
Over .057 to .082, Incl		.0035	.004	.004	.006	.008	.010
Over .082 to .119, Incl		.004	.005	.005	.007	.009	.011
Over .119 to .164, Incl		.005	.006	.006	.008	.010	.012
Over .164 to .219, Incl		.007	.0075	.008	.010	.012	.014
Over .219 to .283			.009	.010	.012	.014	.016
Over .283 to .379			.012				

AVERAGE DIAMETER TOLERANCES FOR COPPER AND COPPER-ALLOY TUBE

(Applicable to Specifications B68, B75, and B135)

Specified Diameter, Inch	Diameter to Which Tolerance Applies	Tolerance, Plus and Minus, Inch
Up to .125, Incl	Inside or Outside	.002
Over .125 to .625, Incl	Inside or Outside	.002
Over .625 to 1.000, Incl	Inside or Outside	.0025
Over 1.000 to 2.000, Incl	Inside or Outside	.003
Over 2.000 to 3.000, Incl	Inside or Outside	.004
Over 3.000 to 4.000, Incl	Inside or Outside	.005
Over 4.000 to 5.000, Incl	Inside or Outside	.006
Over 5.000 to 6.000, Incl	Inside or Outside	.007
Over 6.000 to 8.000, Incl	Inside or Outside	.008
Over 8.000 to 10.000, Incl	Inside or Outside	.010

LENGTH TOLERANCES FOR COPPER AND COPPER-ALLOY TUBE, STRAIGHT LENGTHS

(Applicable to Specifications B68, B75, B135, and B466)

Length	Tolerances, Inch Applicable Only to Full-length Pieces ^b		
	For Major Outside Dimensions Up to 1 Inch, Incl	For Major Outside Dimensions Over 1 Inch to 4 Inch, Incl	For Major Outside Dimensions Over 4 Inch
Specific Lengths:			
Up to 6 Inch, Incl	.031	.062	
Over 6 Inch, to 2 Feet, Incl	.062	.093	.125
Over 2 Feet to 6 Feet, Incl	.093	.125	.250
Over 6 Feet to 14 Feet, Incl	.250	.250	.250
Over 14 Feet	.500	.500	.500
Specific Lengths With Ends	1.000	1.000	1.000
Stock Lengths With or Without Ends	1.000	1.000	1.000

SCHEDULE OF TUBE LENGTHS (SPECIFIC AND STOCK) WITH ENDS FOR COPPER AND COPPER-ALLOY TUBE

(Applicable to Specifications B68, B75, B135, and B466)

Major Outside Dimensions, Inch	Nominal Length, Foot	Shortest Permissible Length, Percent of Nominal Length	Maximum Permissible Weight of Ends, Percent of Lot Weight
Up to 1, Incl	6 to 20, Incl	70	20
Over 1 to 2, Incl	6 to 20, Incl	60	25
Over 2 to 3, Incl	6 to 20, Incl	55	30
Over 3 to 4, Incl	6 to 20, Incl	50	40

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b As stock lengths are cut and placed in stock in advance of orders, departure from this tolerance is not practicable.

SEGMENTS FROM ASTM B251 (cont) **WROUGHT COPPER ALLOY (cont)** **SEAMLESS TUBE (cont)**

TOLERANCES

STRAIGHTNESS TOLERANCES FOR COPPER AND COPPER-ALLOY TUBE IN ANY DRAWN TEMPER^a (Applicable to Specifications B75, B135, B466 and B643)

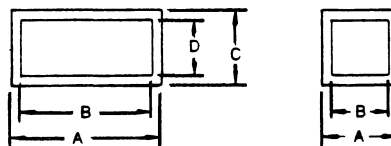
Length, Foot ^b	Maximum Curvature (Depth of Arc), Inch
Over 3.000 to 6.000, Incl	.187
Over 6.000 to 8.000, Incl	.312
Over 8.000 to 10.000, Incl	.500

WALL THICKNESS TOLERANCES FOR COPPER AND COPPER-ALLOY RECTANGULAR AND SQUARE TUBE (Applicable to Specifications B75 and B135)

Wall Thickness, Inch	Outside Diameter, Inch						
	.031 to .125, Incl	Over .125 to .625, Incl	Over .625 to 1, Incl	Over 1 to 2, Incl	Over 2 to 4, Incl	Over 4 to 7, Incl	Over 7 to 10, Incl
Up to .017, Incl	.002	.002	.0025	.003			
Over .017 to .024, Incl	.003	.0025	.003	.0035			
Over .024 to .034, Incl	.0035	.0035	.0035	.004	.006		
Over .034 to .057, Incl	.004	.004	.0045	.005	.007	.009	
Over .057 to .082, Incl		.005	.006	.007	.008	.010	.012
Over .082 to .119, Incl		.007	.008	.009	.001	.012	.014
Over .119 to .164, Incl		.009	.010	.011	.012	.014	.016
Over .164 to .219, Incl		.011	.012	.013	.015	.017	.019
Over .219 to .283			.015	.016	.018	.020	.022

TOLERANCE ON DISTANCE BETWEEN PARALLEL SURFACES FOR COPPER AND COPPER-ALLOY RECTANGULAR AND SQUARE TUBE (Applicable to Specifications B75 and B135)

Dimension A or B (See Sketches), Inch ^c	Tolerances, Inch	
Up to .125, Incl.003		
Over .125 to .625, Incl	.004	
Over .625 to 1.000, Incl	.005	
Over 1.000 to 2.000, Incl	.006	
Over 2.000 to 3.000, Incl	.007	
Over 3.000 to 4.000, Incl	.008	
Over 4.000 to 5.000, Incl	.009	
Over 5.000 to 6.000, Incl	.010	
Over 6.000 to 8.000, Incl	.011	
Over 8.000 to 10.000, Incl	.012	



PERMISSIBLE RADII FOR COMMERCIAL SQUARE CORNERS FOR COPPER AND COPPER-ALLOY RECTANGULAR AND SQUARE TUBE (Applicable to Specifications B75 and B135)

Wall Thickness, Inch	Maximum Radii, Inch	
	Outside Corners	Inside Corners
Up to .058, Incl	.046	.031
Over .058 to .120, Incl	.062	.031
Over .120 to .250, Incl	.093	.031
Over .250	None Established	None Established

^a Applies to round tube in any drawn temper from .250 inch to 3.500 inch, incl in outside diameter.

^b For lengths greater than 10 feet, the maximum curvature shall not exceed .500 inch in any 10-foot portion of the total length.

^c Nominal dimension A determines tolerance applicable to both A and C.
Nominal dimension B determines tolerance applicable to both B and D.

SEGMENTS FROM ASTM B601^a

WROUGHT & CAST COPPER ALLOY

ANNEALED TEMPERS

STANDARD TEMPER DESIGNATIONS

(Annealed to Meet Mechanical Properties, O)

Annealed Tempers -- O	Temper Names
O10	Cast and Annealed (Homogenized)
O11	As Cast and Precipitation Heat Treated
O20	Hot Forged and Annealed
O25	Hot Rolled and Annealed
O30	Hot Extruded and Annealed
O31	Extruded and Precipitation Heat Treated
O40	Hot Pierced and Annealed
O50	Light Anneal
O60	Soft Anneal
O61	Annealed
O65	Drawing Anneal
O68	Deep Drawing Anneal
O70	Dead Soft Anneal
O80	Annealed to Temper -- 1/8 Hard
O81	Annealed to Temper -- 1/4 Hard
O82	Annealed to Temper -- 1/2 Hard

(Annealed to Meet Nominal Average Grain Size, OS)

Annealed Tempers with Grain Size Prescribed -- OS	Temper Designations Nominal Average Grain Size, mm
OS005	0.005
OS010	0.010
OS015	0.015
OS025	0.025
OS035	0.035
OS050	0.050
OS060	0.060
OS070	0.070
OS100	0.100
OS120	0.120
OS150	0.150
OS200	0.200

WROUGHT & CAST COLD-WORKED TEMPERS

(Cold-Worked Tempers to Meet Standard Requirements Based on Cold Rolling or Cold Drawing, H)

Cold-Worked Tempers -- H	Temper Names
H00	1/8 Hard
H01	1/4 Hard
H02	1/2 Hard
H03	3/4 Hard
H04	Hard
H06	Extra Hard
H08	Spring
H10	Extra Spring
H12	Special Spring
H13	Ultra Spring
H14	Super Spring

(Cold-Worked Tempers to Meet Standard Requirements Based on Temper Names Applicable to Particular Products, H)

Cold-Worked Tempers -- H	Temper Names
H50	Extruded and Drawn
H52	Pierced and Drawn
H55	Light Drawn, Light Cold Rolled
H58	Drawn General Purpose
H60	Cold Heading, Forming
H63	Rivet
H64	Screw
H66	Bolt
H70	Bending
H80	Hard Drawn
H85	Medium Hard-Drawn Electrical Wire
H86	Hard-Drawn Electrical Wire

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

SEGMENTS FROM ASTM B601 (cont) **WROUGHT & CAST COPPOR ALLOY (cont)**

STANDARD TEMPER DESIGNATIONS

(Solution Heat Treated, TB)

	Temper Name
TB00	Solution Heat Treated (A)

(Solution Heat Treated and Cold Worked, TD)

	Temper Names
TD00	Solution Heat Treated and Cold Worked: 1/8 Hard
TD01	Solution Heat Treated and Cold Worked: 1/4 Hard (1/4 H)
TD02	Solution Heat Treated and Cold Worked: 1/2 Hard (1/2 H)
TD03	Solution Heat Treated and Cold Worked: 3/4 Hard (3/4 H)
TD04	Solution Heat Treated and Cold Worked: Hard (H)

(Solution Heat Treated and Cold Worked, and Precipitation Heat Treated, TH)

	Temper Names
TH01	Hard and Precipitation Heat Treated: 1/4 Hard (1/4 HT)
TH02	Hard and Precipitation Heat Treated: 1/2 Hard (1/2 HT)
TH03	Hard and Precipitation Heat Treated: 3/4 Hard (3/4 HT)
TD04	Hard and Precipitation Heat Treated: Hard (HT)

(Mill Hardened, TM:)

	Manufacturing Designations
TM00	AM
TM01	1/4 HM
TM02	1/2 HM
TM04	HM
TM06	XHM
TM08	XHMS

SEGMENTS FROM ASTM B16^a

FREE CUTTING BRASS

COPPER ALLOY NO. C36000

TENSILE REQUIREMENTS

ROUNDS, HEXAGONS, OCTAGONS

Temper		Diameter Inch	Minimum Tensile Strength ksi ^b	Minimum Yield Strength ksi ^b	Elongation in 4 X Diameter Min %
New Designation (ASTM B601)	Former Designation				
O60	Soft	1.000 & Under Over 1.000 to 2.000 Over 2.000	48 44 40	20 18 15	15 20 25
H02	One-half Hard	.500 & Under Over .500 to 1.000 Over 1.000 to 2.000 Over 2.000 to 4.000 Over 4.000	57 55 ^d 50 45 40	25 25 20 15 15	7 ^c 10 15 20 20
H04	Hard	.0625 to .188 Over .188 to .500 Over .500 to .750	80 70 65	45 35 30	4 6

RECTANGLES AND SQUARES

Temper		Distances Between Parallel Surfaces		Minimum Tensile Strength ksi ^b	Minimum Yield Strength ksi ^b	Elongation in 4 x Thickness Min %
New Designation (ASTM B602)	Former Designation	Thickness by Inch	Width by Inch			
O60	Soft	1.000 & Under Over 1.000	6.000 & Under 6.000 & Under	44 40	18 15	20 25
H02	One-half Hard	.500 & Under .500 & Under Over .500 to 2.000 Over .500 to 2.000 Over 2.000	1.000 and Under Over 1.000 to 6.000 2.000 & Under Over 2.000 to 6.000 Over 2.000 to 4.000	50 45 45 40 40	25 17 17 15 15	10 15 15 20 20

^a The dimensions and tolerances for material covered by this Specification (B16) can be found in Specification ASTM B249 or B250 (see pages 41 thru 46 in this section). The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c For material furnished in coils the elongation shall be 4%, minimum.

^d If specified for thread rolling applications, the minimum tensile strength shall be 52,000 psi.

SEGMENTS FROM ASTM B16 (cont)
FREE CUTTING BRASS (cont)
COPPER ALLOY NO. C36000 (cont)

HARDNESS REQUIREMENTS

RECTANGLES AND SQUARES

Temper		Distance Between Parallel Surfaces		Rockwell B Hardness ^a
New Designation (ASTM B601)	Former Designation	Thickness by Inch	Width by Inch	
O60	Soft	.500 & Over	.500 & Over	10 - 35
H02	One-half Hard	.500 & Under	1.000 & Under	45 - 85
		.500 & Under	Over .500 to 1.000	
		.500 & Under	Over 1 to 6.000	35 - 70
		Over .500 to 2.000	2.000 & Under	40 - 80
			Over 2.000 to 6.000	35 - 70
		Over 2.000	Over 2.000 to 4.000	35 - 70

ROUNDS, HEXAGONS, OCTAGONS

Temper			Rockwell B Hardness ^a	
New Designation ASTM B601)	Former Designation		Rounds	Hexagons, Octagons
O60	Soft	.500 & Over	10 - 45	10 - 45
H02	One-half Hard	.500 to 1.000	60 - 80 ^b	55 - 80
		Over 1.000 to 2.000	55 - 75	45 - 80
		Over 2.000 to 3.000	45 - 70	45 - 65
		Over 3.000 to 4.000	40 - 65	35 - 60
		Over 4.000	25 Min	25 Min

^a Determined on the cross section midway between surface and center.

^b If specified for thread rolling application, the Rockwell B hardness shall be 55 to 75.

SEGMENTS FROM ASTM B36^a

BRASS

PLATE, SHEET, STRIP & ROLLED BAR

COPPER ALLOYS NO. C21000, C22000, C23000, C24000, C26000, C26800, C27200

MECHANICAL PROPERTIES

Rolled Temper		Tensile Strength ksi ^c		Yield Strength ksi ^c		Approximate Rockwell Hardness ^b							
						B Scale				Superficial 30-T			
						.020 to .036 Inch		Over .036 Inch		.012 to .028 Inch		Over .028 Inch	
Standard Designation (Per ASTM B601)	Former Designation	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
H01	One-quarter Hard	49	59	21	46	40	61	44	65	43	57	46	60
H02	One-half Hard	57	67	42	60	60	74	63	77	56	66	58	68
H03	Three-quarter Hard	64	74	55	69	72	79	75	82	65	70	67	72
H04	Hard	71	81	67	78	79	84	81	86	70	73	71	74
H06	Extra Hard	83	92	79	87	85	89	87	91	74	76	75	77
H08	Spring	91	100	82	91	89	92	90	93	76	78	76	78
H10	Extra Spring	95	104	86	93	91	94	92	95	77	79	77	79

UNS NO. C26000 and C26800

APPROXIMATE ROCKWELL HARDNESS OF ANNEALED MATERIAL

Annealed Temper, Nominal Grain Size mm	Standard Designation (Per ASTM B601)	Approximate Rockwell Hardness ^b			
		F Scale		Superficial 30-T	
		Min	Max	Min	Max
0.120	OS120	50	62		21
0.070	OS070	52	67	3	27
0.050	OS050	61	73	20	35
0.035	OS035	65	76	25	38
0.025	OS025	67	79	27	42
0.015	OS015	72	85	33	50

^a The dimensions and tolerances for material covered by this Specification (B36) can be found in Specification ASTM B248. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Rockwell Hardness values apply as follows:

The F scale hardness values apply to metal .020 inch (0.508 mm) and over in thickness.
The 30-T scale hardness values apply to metal .015 inch (0.305 mm) and over in thickness.
The B scale values apply to metal .020 inch and over in thickness.

^c ksi = 1000 psi.

SEGMENTS FROM ASTM B121^a

LEADED BRASS

PLATE, SHEET, STRIP & ROLLED BAR

COPPER ALLOY NO. C33500, C34000, C34200, C35000, C35300, C35340 AND C35600

MECHANICAL PROPERTIES

Temper		Tensile Strength ksi ^c		Approximate Rockwell Hardness ^b			
				B Scale		30-T	
Standard Designation (Per ASTM B601)	Former Designation	Min	Max	Min	Max	Min	Max
H01	One-quarter Hard	49	59	40	65	43	60
H02	One-half Hard	55	65	57	74	54	66
H04	Hard	68	78	76	84	68	73
H06	Extra Hard	79	89	83	89	73	76
H08	Spring	86	95	87	92	75	78
H10	Extra Spring	90	99	88	93	76	79

COPPER ALLOY UNS NO. C33500, C34000, C34200, C35000, C35300, and C35600

APPROXIMATE ROCKWELL HARDNESS OF ANNEALED MATERIAL

Temper, Nominal Grain Size mm	Standard Designation	Approximate Rockwell Hardness ^b			
		F Scale		Superficial 30-T	
		Min	Max	Min	Max
0.070	OS070	54	67	12	27
0.050	OS050	61	73	20	35
0.035	OS035	65	76	25	38
0.025	OS025	67	79	27	42

^a The dimension and tolerances for this Specification (B121) can be found in Specification ASTM B248. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Rockwell Hardness values apply as follows:

The B and F scale hardness values apply to metal .020 inch (0.508 mm) and over in thickness.
The 30-T scale hardness values apply to metal .012 inch (0.305 mm) and over in thickness.

^c ksi = 1000 psi.

SEGMENTS FROM ASTM B134^a BRASS WIRE

COPPER ALLOYS C21000, C22000, C23000, C24000, C26000, C27000 AND C27400

TENSILE STRENGTH
REQUIREMENTS FOR
ROUND, HEXAGONAL,
OCTAGONAL, AND
SQUARE MATERIAL
.020 and OVER
IN DIAMETER

TENSILE STRENGTH AND APPROXIMATE ROCKWELL
HARDNESS FOR RECTANGULAR MATERIAL,
OTHER THAN SQUARE WIRE

COPPER ALLOY NUMBER C26000

ALLOY NUMBERS C26000, C27000, C27400

Temper		Tensile Strength	
Standard Designation (Per ASTM B601)	Former Designation	ksi ^b	
		Min	Max
H00	One-eighth Hard	50	65
H01	One-quarter Hard	62	77
H02	One-half Hard	79	94
H03	Three-quarter Hard	92	107
H04	Hard ^c	102	117
H06	Extra Hard ^{d, e}	115	129
H08	Spring ^{e, f}	120	

Temper		Mechanical Strength ksi ^b		Approximate Rockwell Hardness ^g							
				B Scale				Superficial 30-T			
Standard Designation (Per ASTM B601)	Former Designation	Min	Max	.020 to .036 Inch		Over .036 Inch		.012 to .028 Inch		Over .028 Inch	
				Min	Max	Min	Max	Min	Max	Min	Max
H01	One-quarter Hard	49	59	40	61	44	65	43	57	46	60
H02	One-half Hard	57	67	60	74	63	77	56	66	58	68
H03	Three-quarter Hard	64	74	72	79	75	82	65	70	67	72
H04	Hard	71	81	79	84	81	86	70	73	71	74
H06	Extra Hard	83	92	85	89	87	91	74	76	75	77
H08	Spring	91	100	89	92	90	93	76	78	76	78
H10	Extra Spring	95	104	91	94	92	95	77	79	77	79

COPPER ALLOY NUMBERS C27000, C27400

Temper		Mechanical Strength ksi ^b		.020 to .036 Inch		Over .036 Inch		.012 to .028 Inch		Over .028 Inch	
Standard Designation (Per ASTM B601)	Former Designation	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
H01	One-quarter Hard	49	59	40	61	44	65	43	57	46	60
H02	One-half Hard	55	65	57	71	60	74	54	64	56	66
H03	Three-quarter Hard	62	72	70	77	73	80	65	69	67	71
H04	Hard	68	78	76	82	78	84	68	72	69	73
H06	Extra Hard	79	89	83	87	85	89	73	75	74	76
H08	Spring	86	95	87	90	89	92	75	77	76	78
H10	Extra Spring	90	99	88	91	90	93	76	78	77	79

^a The dimensions and tolerances for material covered by this Specification can be found in Specification ASTM B250. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c Hard temper wire is not generally available in sizes over .500 inch diameter.

^d Extra Hard temper is not generally available in sizes over .375 inch diameter.

^e Square wire is not generally available in extra hard or spring tempers.

^f Spring temper is not generally available in sizes over .250 inch diameter.

^g Rockwell Hardness values apply as follows: The B scale values apply to metal .020 inch and over in thickness, and the 30-T scale values apply to metal .012 inch and over in thickness.

SEGMENTS FROM ASTM B135^a

BRASS

SEAMLESS TUBE

COPPER ALLOYS C22000, C23000, C26000, C27000, C27200, C28000, C33000, C33200, C37000

MECHANICAL PROPERTY REQUIREMENTS OF DRAWN TEMPER TUBE

Alloy	Standard Temper Designation	Former Temper Designation	Outside Dia or Distance Between Outside Parallel Surfaces, Inch	Wall Thickness, Inch	Tensile Strength ksi ^b (Min)	Rockwell Hardness 30T ^c (Min)
C22000	H58	Drawn (General Purpose)	All	All	40	38
	H80		1.000 & Under	.020 to .120	52	55
		Hard Drawn	Over 1.000 to 2.000	.035 to .180	52	55
			Over 2.000 to 4.000	.060 to .250	52	55
C23000	H55	Light Drawn	All	All	44 - 58	43 - 75
	H58	Drawn (General Purpose)	All	All	44	43
	H80		1.000 & Under	.020 to .120	57	65
		Hard Drawn	Over 1.000 to 2.000	.035 to .180	57	65
			Over 2.000 to 4.000	.060 to .250	57	65
C26000	H58	Drawn (General Purpose)	All	All	54	53
C27000	H80					
C27200		Hard Drawn	1.000 & Under	.020 to .120	66	70
C33000			Over 1.000 to 2.000	.035 to .180	66	70
C33200			Over 2.000 to 4.000	.060 to .250	66	70

^a The dimensions and tolerances for material covered by this Specification (B135) can be found in Specification ASTM B251. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c Rockwell Hardness values apply only to tubes having a wall thickness of .012 inch or over and to round tubes having an inside diameter of .312 inch or over. Rockwell Hardness tests shall be made on the inside surface of the tube.

SEGMENTS FROM ASTM B135 (cont)

BRASS (cont)

SEAMLESS TUBE (cont)

COPPER ALLOYS C22000, C23000, C26000, C27000, C27200, C28000, C33000, C33200, C37000 (cont)

MECHANICAL PROPERTY REQUIREMENTS OF ANNEALED TEMPER TUBE

Alloy	Standard Temper Designation	Former Temper Designation	Wall Thickness Inch	Rockwell Hardness ^a		Average Grain Size, mm	
				Scale	Max	Min	Max
C22000	O60	Soft Anneal	.045 & Under	30T	30	.025	.060
			Over .045	F	70	.025	.060
	O50	Light Anneal	.045 & Under	30T	37	b	.035
			Over .045	F	78	b	.035
C23000	O60	Soft Anneal	.045 & Under	30T	36	.025	.060
			Over .045	F	75	.025	.060
	O50	Light Anneal	.045 & Under	30T	39	b	.035
			Over .045	F	85	b	.035
C26000 C33000, & C33200	O60	Soft Anneal	.030 & Under	30T	40	.025	.060
			Over .030	F	80	.025	.060
C26000 C28000, C33000, C33200, & C37000	O50	Light Anneal	.030 & Under	30T	60	b	.035
			Over .030	F	90	b	.035
C27000 & C27200	O60	Soft Anneal	.030 & Under	30T	40	.025	.060
			Over .030	F	80	.025	.060
	O50	Light Anneal	.030 & Under	30T	60	b	.035
			Over .030	F	90	b	.035

^a Rockwell Hardness values shall apply only to tubes having a wall thickness of .015 inch or over and to round tubes having an inside diameter of .3125 inch or over and to rectangular including square tubes having an inside major distance between parallel surfaces of .3125 inch or over. For all other tubes no Rockwell Hardness values shall apply. Rockwell Hardness tests shall be made on the inside surface of the tube.

^b Although no minimum grain size is specified, the product must nevertheless have a fully recrystallized grain structure.

SEGMENTS FROM ASTM B453^a BRASS

LEADED ROD

COPPER ALLOYS C33500, C34000, C34500, C35000, C35300, C35340, C35600

MECHANICAL PROPERTIES

Temper		Diameter or Distance Between Parallel Surfaces Inch	Minimum Tensile Strength ksi ^b	Minimum Yield Strength ksi ^b	Elongation in 4 X Dia Min %
Standard Designation	Former Designation				
O60	Soft	.500 & Under	46	16	20
		Over .500 to 1.000	44	15	25
		Over 1.000	40	15	30
H01	One-quarter Hard	.500 & Under	52	25	10
		Over .500 to 1.000	50	20	15
		Over 1.000	42	15	20
H02	One-half Hard	.500 & Under	57	25	7
		Over .500 to 1.000	55	25	10
		Over 1.000	50	20	15

HARDNESS REQUIREMENTS

Temper		Diameter or Distance Between Parallel Surfaces, Inch	Rockwell B Hardness Determined on the Cross-section Midway Between Surface and Center
Standard Designation	Former Designation		
O60	Soft	Over .500	45 Max
H01	One-quarter Hard	Over .500 to 1.000	50 - 75
		Over 1.000 to 2.000	40 - 70
		Over 2.000	35 - 65
H02	One-half Hard	Over .500 to 1.000	60 - 80
		Over 1.000 to 2.000	55 - 75
		Over 2.000	40 - 70

^a The dimensions and tolerances for material covered by this Specification (B453) can be found in Specification ASTM B249. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

SEGMENTS FROM B1^a

COPPER

WIRE

TENSILE PROPERTIES FOR HARD-DRAWN COPPER WIRE

Diameter		Area at 60°F (20°C)		Nominal Tensile Strength		Nominal Elongation, Percent	
Inch	mm	Inch	mm	psi	In 10 Inch kgf/mm	In 60 Inch (254 mm)	(1524 mm)
.2893	7.348	.06573	42.4	56,000	39.4	2.17	
.1620	4.115	.02061	13.3	62,100	43.7		1.140
.0907	2.304	.00646	4.17	65,400	46.0		.97
.0508	1.290	.00203	1.31	66,600	46.8		.87

SEGMENTS FROM B2^a

TENSILE PROPERTIES FOR MEDIUM-HARD-DRAWN COPPER WIRE

Diameter		Area at 60°F (20°C)		Tensile Strength				Elongation, Min, Percent	
				psi		kgf/mm		In 10 Inch	(1524 mm)
Inch	mm	Inch	mm	Minimum	Maximum	Minimum	Maximum	(254 mm)	mm
.2893	7.348	.08291	53.5	45,000	52,000	31.6	36.6	3.00	
.1620	4.115	.02061	13.3	49,000	56,000	34.5	39.4		1.15
.0907	2.304	.00646	4.17	50,660	57,660	35.6	40.6		1.02
.0508	1.290	.00203	1.31	52,330	59,330	36.8	41.7		.092

SEGMENTS FROM B3^a

TENSILE PROPERTIES FOR SOFT OR ANNEALED COPPER WIRE

Diameter		Area at 60°F (20°C)		Elongation in 10 Inch (254 mm), Min, Percent
Inch	mm	Inch	mm	
.2893	7.348	.06573	42.4	30
.1620	4.115	.02061	13.3	30
.0907	2.304	.00646	4.17	25
.0508	1.290	.00203	1.31	25
.0285	.724	.000638	.411	25
.0159	.404	.000199	.128	20
.0089	.226	.0000622	.040	15
.0050	.127	.0000196	.013	15
.0031	.079	.00000755	.0049	15

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

SEGMENTS FROM ASTM B111^a

COPPER

TUBING

MECHANICAL PROPERTIES & TOLERANCES

Copper or Copper Alloy No.	Temper		Tensile Strength Min	Yield Strength, ^b Min	Elongation In 2 Inch
	New Designation	Former Designation	ksi ^c	ksi ^c	Min %
C10100, C10200, C10300, C10800, C12000, C12200, C14200	H55	Light-drawn	36	30	
C10100, C10200, C10300, C10800, C12000, C12200, C14200	H80	Hard-drawn	45	40	
C19200	H55	Light-drawn	40	35	
C19200	H80	Hard-drawn	48	43	
C19200	O61	Annealed	38	12	
C23000	O61	Annealed	40	12	
C28000	O61	Annealed	50	20	
C44300, C44400, C44500	O61	Annealed	45	15	
C60800	O61	Annealed	50	19	
C61300, C61400	O61	Annealed	70	30	
C68700	O61	Annealed	50	18	
C70400	O61	Annealed	38	12	
C70400	H55	Light-drawn	40	30	
C70600	O61	Annealed	40	15	
C70600	H55	Light-drawn	45	35	
C71000	O61	Annealed	45	16	
C71500	O61	Annealed	52	18	
Wall Thickness up to .048 Inch, Incl	HR50	Drawn, Stress-relieved	72	50	12
Wall Thickness over .048 Inch	HR50	Drawn, Stress-relieved	72	50	15

DIAMETER TOLERANCES

Outside Diameter, Inch	Wall Thickness, Inch				
	.020 ^d .022 .025 .028	.032	.035	.042	.049 and Over
Diameter Tolerance, Plus and Minus, Inch					
Up to .500, Incl	.003	.0025	.0025	.0025	.0025
Over .500 to .740, Incl	.0040	.004	.004	.0035	.003
Over .740 to 1.000, Incl	.0060	.006	.005	.0045	.004
Over 1.000 to 1.250, Incl		.009	.008	.006	.0045
Over 1.250 to 1.375, Incl				.008	.005
Over 1.375 to 2.000, Incl					.006

WALL THICKNESS TOLERANCES, PLUS AND MINUS INCH

Wall Thickness, Inch	Outside Diameter, Inch		
	Over .125 to .625, Incl	Over .625 to 1, Incl	Over 1 to 2, Incl
.020, Incl to .032	.003	.003	
.032, Incl to .035	.003	.003	.004
.035, Incl to .058	.004	.0045	.0045
.058, Incl to .083	.0045	.005	.005
.083, Incl to .120	.005	.0065	.0065
.120, Incl to .134	.007	.007	.0075

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b At .5% extension under load.

^c ksi = 1000 psi.

^d Tolerances in this column are applicable to light-drawn and drawn tempers only. Tolerances for annealed tempers shall be as agreed upon between the manufacturer and purchaser.

SEGMENTS FROM ASTM B152^a

COPPER

SHEET, STRIP & PLATE

TENSILE STRENGTH REQUIREMENTS AND APPROXIMATE ROCKWELL HARDNESS VALUES FOR ROLLED TEMPERS

Temper Standard Designation	Temper Former Designation	Tensile Strength ksi ^b		Yield Strength ksi ^b		Approximate Rockwell Hardness ^c			
		Min	Max	Min	Max	F Scale		Superficial 30T	
						Min	Max	Min	Max
	Cold-rolled Tempers:								
H00	One-eighth Hard	32	40			54	82		49
H01	One-quarter Hard	34	42	26	39	60	84	18	51
H02	One-half Hard	37	46	39	44	77	89	43	57
H03	Three-quarter Hard	41	50	39	48	82	91	47	59
H04	Hard	43	52	41	50	86	93	54	62
H06	Extra Hard	47	56	46	55	88	95	56	64
H08	Spring	50	58	48	57	91	97	60	66
H10	Extra Spring	52		51		92		61	
	Hot-rolled Tempers:								
M20	Hot-rolled	30	38				75		41
O25	Hot-rolled & Annealed	30	38				65		31

^a The dimensions and tolerances for material covered by B301 Specification can be found in Specification ASTM B249, Specification B152 can be found in Specification ASTM B248. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c Rockwell values apply as follows: The F Scale applies to metal .020 inch and over in thickness. The superficial 30-T Scale applies to metal .012 inch and over in thickness.

SEGMENTS FROM ASTM B301^a FREE CUTTING COPPER ROD & BAR

TENSILE STRENGTH REQUIREMENTS AND APPROXIMATE ROCKWELL HARDNESS VALUES FOR ROLLED TEMPERS

Temper Designations		Diameter or Distance Between Parallel	Tensile Strength Min ksi ^b	Yield Strength ^c Min ksi ^b	Elongation in 4 X Diameter or Thickness of Specimen ^d Minimum Percent
Standard	Former				
H02	One-half Hard	Rod: .0625 to .250 Over .250 to 2.625	38 38	30 30	8 12
H04	Hard	Rod: .0625 to .250 Over .250 to 1.250 Over 1.250 to 3.000 Bar: Over .188 to .375 Over .375 to .500 Over .500 to 2.000 Over 2.000 to 4.000	48 44 40 42 40 33 32	40 38 35 35 32 18 15	4 8 8 10 10 12 12

^a The dimensions and tolerances for material covered by B301 Specification can be found in Specification ASTM B249, Specification B152 can be found in Specification ASTM B248. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c Not determined unless specifically requested.

^d In any case a minimum gage length of 1 inch shall be used.

SEGMENTS FROM ASTM B194^a

COPPER BERYLLIUM

PLATE, SHEET, STRIP & ROLLED BAR

COPPER ALLOYS C17000 & C17200

MECHANICAL PROPERTY REQUIREMENTS FOR MATERIAL AS SUPPLIED IN SOLUTION TREATED CONDITION

Temper		Tensile Strength ^c , ksi ^d	Yield Strength, ksi ^d	Rockwell Hardness		
Standard Designation	Former Designation			B Scale	30T Scale	15T Scale
TB00	Solution- Heat-treated (Annealed)	60 - 78	35	45 - 78	46 - 67	75 - 85
TD01	One-quarter Hard	75 - 88	10	68 - 90	62 - 75	83 - 89
TD02	One-half Hard	85 - 100	5	88 - 96	74 - 79	88 - 91
TD04	Hard	100 - 120	2	96 - 102	79 - 83	91 - 94

ALLOY NUMBER C17000

MECHANICAL PROPERTY REQUIREMENTS AFTER PRECIPITATION HEAT TREATMENT

Temper		Tensile Strength ^c , ksi ^d	Yield Strength, ksi ^d	Rockwell Hardness		
Standard Designation	Former Designation			C Scale	30N Scale	15N Scale
TF00	Precipitation Hardened (Annealed)	150 - 180	130	33	53	76.5
TH01	One-quarter Hard	160 - 190	135	35	55	77
TH02	One-half Hard	170 - 200	145	37	57	78.5
TH04	Hard	180 - 210	155	39	59	79.5

ALLOY NUMBER C17200

MECHANICAL PROPERTY REQUIREMENTS AFTER PRECIPITATION HEAT TREATMENT

Temper		Tensile Strength ^c , ksi ^d	Yield Strength, ksi ^d	Rockwell Hardness		
Standard Designation	Former Designation			C Scale	30N Scale	15N Scale
TF00	Precipitation Hardened (Annealed)	165 - 195	140	36	56	78
TH01	One-quarter Hard	175 - 205	150	38	58	79
TH02	One-half Hard	185 - 215	160	39	59	79.5
TH04	Hard	190 - 220	165	40	60	80

^a The dimensions and tolerances for material covered by these Specifications (B194, B196 and B197) can be found in Specification ASTM B248, B249 & B250. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^d Thickness of material: C Scale .032 Inch and over
30N Scale .020 to .032 Inch
15N Scale .015 to .020 Inch

^c The upper limit in the tensile strength column applies to material thicker than .020 Inch.

^d ksi = 1000 psi.

SEGMENTS FROM ASTM B194 (cont)
COPPER BERYLLIUM (cont)
PLATE, SHEET, STRIP & ROLLED BAR (cont)
COPPER ALLOYS C17000 & C17200 (cont)

MECHANICAL PROPERTY REQUIREMENTS - MILL HARDENED CONDITION^a

Temper Designation		Tensile Strength, ksi ^b (MPa)	Yield Strength, ksi (MPa), .2% Offset	Elongation in 2.000 Inch (50 mm) Min, % ^c	Rockwell Hardness ^d , Min		
Standard	Former ^a				C Scale	30N Scale	15N Scale
Copper Alloy UNS NO. C17000							
TM00	AM	100-110	70-90	18	18	37	67.5
TM01		(690-760) ^e	(480-620)				
	1/4 HM	110-120 ^e	80-110	15	21	42	70
TM02		(760-830)	(550-760)				
	1/2 HM	120-135 ^e	95-125	12	25	46	72
TM04		(830-930)	(660-860)				
	HM	130-150 ^e	110-135	9	30	50	75
TM05		(900-1040)	(760-930)				
	SHM	150-160 ^e	125-140	9	31	52	75.5
TM06		(1030-1100)	(860-970)				
	XHM	160-175 ^e	135-165	3	32	52	76
Copper Alloy UNS NO. C17200							
TM00	AM	100-110 ^e	70-90	18	18	37	67.5
		(690-760)	(480-620)				
TM01	1/4 HM	110-120 ^e	80-110	15	21	42	70
		(760-830)	(550-760)				
TM02	1/2 HM	120-135 ^e	95-125	12	25	46	72
		(830-930)	(660-860)				
TM04	HM	1350-150 ^e	110-135	9	30	50	75
		(930-1030)	(760-930)				
TM05	SHM	150-160 ^e	125-140	9	31	52	75.5
		(1030-1100)	(860-970)				
TM06	XHM	160-175 ^e	135-170	4	32	52	76
		(1100-1210)	(930-1170)				
TM08	XHMS	175-190 ^e	150-180	3	33	53	76.5
		(1210-1310)	1030-1240)				

^a These values apply to mill products (Section 11). See 11.3 (page 28 of this section) for exceptions in end products.

^b ksi - 1000 psi.

^c Applicable to material .004 inches (.102 mm) and thicker.

^d The thickness of material that may be tested by use of the Rockwell Hardness scales is as follows:

C Scale	.032 inch (.813 mm) and over
30N Scale	.020 to .032 inch (.508 to .813 mm), excl.
15N Scale	.015 to .020 inch (.381 to .508 mm), excl.

Hardness values shown apply only to direct determinations, not converted values.

^e The upper limits in the tensile strength column are for design guidance only.

SEGMENTS FROM ASTM B196^a

COPPER BERYLLIUM

ROD & BAR

COPPER ALLOYS C17000, C17200, & C17300

TENSILE STRENGTH AND HARDNESS REQUIREMENTS AFTER PRECIPITATION HEAT TREATMENT ALLOY NUMBER C17000

Temper		Dia or Distance Between Parallel Surfaces, Inch	Tensile Strength, ksi ^b	Rockwell Hardness C Scale
Standard Designation	Former Designation			
TF00	Precipitation Hardened (Annealed)	All Sizes	150 - 190	32 - 39
TH04	Hard	.375 & Under	175 - 210	36 - 41
		Over .375 to 1.000	170 - 205	35 - 40
		Over 1.000	165 - 200	34 - 39

TENSILE STRENGTH AND HARDNESS REQUIREMENTS AFTER PRECIPITATION HEAT TREATMENT ALLOY NUMBERS C17200 & C17300

Temper		Dia or Distance Between Parallel Surfaces, Inch	Tensile Strength, ksi ^b	Rockwell Hardness C Scale
Standard Designation	Former Designation			
TF00	Precipitation Hardened (Annealed)	All Sizes	165 - 200	36 - 40
TH04	Hard	.375 & Under	185 - 225	39 - 45
		Over .375 to 1	180 - 220	38 - 44
		Over 1.000	175 - 215	37 - 43

TENSILE STRENGTH AND HARDNESS REQUIREMENTS FOR ROD AND BAR AS SUPPLIED COMERCIALY

Temper		Dia or Distance Between Parallel Surfaces, Inch	Tensile Strength, ksi ^b	Rockwell Hardness B Scale
Standard Designation	Former Designation			
TB00	Solution Heat-treated	All Sizes	60 - 85	45 - 85
TD04	Hard	.375 & Under	90 - 130	88 - 103
		Over .375 to 1.000	90 - 125	88 - 102
		Over 1.000	85 - 120	88 - 101

^a The dimensions and tolerances for material covered by these Specifications (B194, B196 and B197) can be found in Specification ASTM B248, B249 & B250. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

SEGMENTS FROM ASTM B197^a

COPPER BERYLLIUM

WIRE

COPPER ALLOYS C17200 & C17300

TENSILE STRENGTH REQUIREMENTS FOR ROUND, HEXAGONAL, OCTAGONAL, AND SQUARE MATERIAL SUPPLIED IN SOLUTION TREATED CONDITION

Temper		Tensile Strength, ksi ^b
Standard Designation	Former Designation	
TB00	Annealed	58 - 78
TD01	One-quarter Hard	90 - 115
TD02	One-half Hard	110 - 135
TD03	Three-quarter Hard ^c	130 - 155
TD04	Hard	140 - 155

STRENGTH REQUIREMENTS FOR ROUND, HEXAGONAL, OCTAGONAL, AND SQUARE MATERIAL AFTER PRECIPITATION HEAT TREATMENT

Temper		Tensile Strength, ksi ^b
Standard Designation	Former Designation	
TF00	Precipitation Hardened (Annealed)	160 - 190
TH01	One-quarter Hard	175 - 205
TH02	One-half Hard	185 - 215
TH03	Three-quarter Hard	190 - 230
TH04	Hard	195 - 230

MECHANICAL PROPERTY REQUIREMENTS FOR RECTANGULAR MATERIAL AS SUPPLIED IN SOLUTION TREATED CONDITION

Temper Designation		Strength ksi ^b	Elongation in 2 Inch Min % ^e	Rockwell Hardness ^d		
Standard	Former			B Scale	30T Scale	15T Scale
TB00	Annealed	60 - 78	35	45 - 78	46 - 67	75 - 85
TD01	One-quarter Hard	75 - 88	10	68 - 90	62 - 75	83 - 89
TD02	One-half Hard	85 - 100	5	88 - 96	74 - 79	88 - 91
TD04	Hard	100 - 120	2	96 - 102	79 - 83	91 - 94

MECHANICAL PROPERTY REQUIREMENTS FOR RECTANGULAR MATERIAL AFTER PRECIPITATION HEAT TREATMENT

Temper		Minimum Tensile Strength ksi ^b	Rockwell Hardness ^d		
Standard Designation	Former Designation		C Scale Min	30N Scale Min	15N Scale Min
TF00	Precipitation Hardened (Annealed)	165 - 190	36	56	78
TH01	One-quarter Hard	175 - 200	38	58	79
TH02	One-half Hard	185 - 210	39	59	79.5
TH04	Hard	190 - 215	40	60	80

^a The dimensions and tolerances for material covered by this specification (B197) can be found in Specification ASTM B250. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c Three-quarter hard condition is generally available up to .080 inch diameter or distance between parallel surfaces.

^d Thickness of material in Rockwell Hardness scales:

B scale: .032 inch & over	C scale: .032 inch & over
30T scale: .020 to .032 inch	30N scale: .020 to .032 inch
15T scale: .015 to .020 inch	15N scale: .015 to .020 inch

^e Elongation requirements apply to material .004 inch and thicker.

SEGMENTS FROM ASTM B643^a COPPER BERYLLIUM TUBE

MECHANICAL PROPERTY REQUIREMENTS FOR MATERIAL AS SUPPLIED COMMERCIALY

Temper ^c		Diameter Distance Between Parallel Surfaces Inch	Rockwell ^d Hardness B Scale	Tensile Strength ^e ksi ^f
Standard Designation	Former Designation			
TB00	Annealed	.750 & Over	45 - 85	60 - 85
TD04	Hard	.750 & Over	88 - 103	85 - 115

TENSILE STRENGTH & HARDNESS REQUIREMENTS AFTER PRECIPITATION HEAT TREATMENT^b

Temper ^c		Diameter Distance Between Parallel Surfaces Inch	Rockwell ^d Hardness C Scale	Tensile Strength ^e ksi ^f
Standard Designation	Former Designation			
TB00	Annealed	.750 & Over	36 - 41	160 - 190
TH04	Hard	.750 & Over	37 - 44	170 - 215

WALL THICKNESS TOLERANCES -- COLD-WORKED TUBE

NOTE: Maximum deviation at any point -- The following tolerances are plus and minus; if tolerances all plus or all minus are desired double the values given.

Wall Thickness, Inch	Outside Diameter, Inch				
	Over .625 to 1.000 Inclusive	Over 1.000 to 2.000 Inclusive	Over 2.000 to 4.000 Inclusive	Over 4.000 to 7.000 Inclusive	Over 7.000 to 12.000 Inclusive
Over .034 to .057, Incl	.0045	.0045	.0065	.009	
Over .057 to .082, Incl	.005	.005	.0075	.010	.013
Over .082 to .119, Incl	.0065	.0065	.009	.011	.014
Over .119 to .164, Incl	.007	.0075	.010	.013	.015
Over .164 to .219, Incl	.009	.010	.012	.015	.018
Over .219 to .283, Incl	.012	.013	.015	.018	.020
Over .283 to .379, Incl	.014				

WALL THICKNESS TOLERANCES -- HOT-WORKED TUBE

NOTE: Maximum deviation at any point -- The following tolerances are plus and minus; if tolerances all plus or all minus are desired double the values given.

Wall Thickness, Inch	Outside Diameter, Inch ^g			
	.625 to 1.000 Inclusive	Over 1.000 to 2.000 Inclusive	Over 2.000 to 4.000 Inclusive	Over 4.000 Inclusive
Over .125 to .250, Incl	±.014	±.017	±.020	±.030
Over .250 to .500, Incl	±.017	±.023	±.032	±.053
Over .500 to 1.000, Incl		±.030	±.053	±.083
Over 1.000			±.068	±.098

AVERAGE DIAMETER TOLERANCES

Specified Diameter, Inch	Tolerance, Plus and Minus Inch ^h	
	Cold-worked Tube	Hot-worked Tube
Over .500 to .750, Incl	.003	.020
Over .750 to 1.000, Incl	.006	.020
Over 1.000 to 2.000, Incl	.008	.030
Over 2.000 to 3.000, Incl	.010	.040
Over 3.000 to 4.000, Incl	.012	.050
Over 4.000 to 5.000, Incl	.016	.060
Over 5.000 to 6.000, Incl	.018	.060
Over 6.000 to 8.000, Incl	.020	.060
Over 8.000 to 12.000, Incl	.030	.060

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b These values apply to mill products.

^c Standard designations defined in Recommended Practice B601.

^d Hardness values shown apply only to direct determinations, not converted values.

^e Hardness is the normal commercial acceptance criterion. Mechanical properties apply only when specifically required.

^f ksi = 1000 psi.

^g When tube is ordered by outside or inside diameters, the maximum plus and minus deviation of the wall thickness from the nominal at any point shall not exceed the values given in this table by more than 50%.

^h Tolerance applies to inside or outside diameter.

SEGMENTS FROM ASTM B103^a

PHOSPHOR BRONZE

PLATE, SHEET, STRIP & ROLLED BAR

COPPER ALLOYS C51000, C51100, C52400, C52100, C53200, C53400 & C54400

TENSILE STRENGTH REQUIREMENTS AND APPROXIMATE ROCKWELL HARDNESS VALUES FOR COPPER ALLOY NUMBER C51000

Temper		Thickness, Inch	Tensile Strength ksi ^b		Yield Strength		Rockwell Hardness			
							B Scale		30T Scale	
Std. Desig.	Former Desig.		Min	Max	Min	Max	Min	Max	Min	Max
O60	Soft	.003 to .010	43	58					24	53
		Over .010 - .029	43	58						
		Over .020 - .039	43	58			12	60	32	59
		Over .029	43	58						
		Over .039	43	58			16	64		
H02	One-half Hard	.003 to .010	58	73					53	69
		Over .010 - .029	58	73	47	68				
		Over .020 - .039	58	73	47	68	60	82	59	73
		Over .029	58	73	47	68				
		Over .039	58	73	47	68	64	85		
H04	Hard	.003 to .010	76	91					71	75
		Over .010 - .029	76	91	74	88				
		Over .020 - .039	76	91	74	88	84	91	73	78
		Over .029	76	91	74	88				
		Over .039	76	91	74	88	86	93		
H06	Extra Hard	.003 to .010	88	103					74	78
		Over .010 - .029	88	103	85	102				
		Over .020 - .039	88	103	85	102	89	95	71	81
		Over .029	88	103	85	102				
		Over .039	88	103	85	102	92	96		
H08	Spring	.003 to .010	95	110					76	80
		Over .010 - .029	95	110	92	108				
		Over .020 - .039	95	110	92	108	92	97		
		Over .029	95	110	92	108			79	82
		Over .039	95	110	92	108	94	98		
H10	Extra Spring	.003 to .010	100	114					77	81
		Over .010 - .029	100	114						
		Over .020 - .039	100	114	94	08				
		Over .029	100	114					80	83
		Over .039	100	114	95	99				

TENSILE STRENGTH REQUIREMENTS AND APPROXIMATE ROCKWELL HARDNESS VALUES FOR ALLOY NUMBER C52100

Temper		Thickness, Inch	Tensile Strength ksi ^b		Yield Strength		Rockwell Hardness			
							B Scale		30T Scale	
Std. Desig.	Former Desig.		Min	Max	Min	Max	Min	Max	Min	Max
O60	Soft	Over .010 - .029	53	67					27	62
		Over .020 - .039	53	67					66	
		Over .029	53	67					38	68
		Over .039	53	67					29	70
H02	One-half Hard	Over .010 - .029	69	84	51	75			63	75
		Over .020 - .039	69	84	51	75	69	88	67	
		Over .029	69	84	51	75				78
		Over .039	69	84	51	75	76	91		
H04	Hard	Over .010 - .029	85	100	78	95			73	80
		Over .020 - .039	85	100	78	95	89	95	76	
		Over .029	85	100	78	95				81
		Over .039	85	100	78	95	91	97		
H06	Extra Hard	Over .010 - .029	97	112	92	107			77	82
		Over .020 - .039	97	112	92	107	93	98		
		Over .029	97	112	92	107			78	83
		Over .039	97	112	92	107	95	100		
H08	Spring	Over .010 - .029	105	119	100	113			78	83
		Over .020 - .039	105	119	100	113	95	100		
		Over .029	105	119	100	113			79	84
		Over .039	105	119	100	113	97	102		
H10	Extra Spring	Over .010 - .029	110	122	116	195			79	83
		Over .020 - .039	110	122	116	195	96	101		
		Over .029	110	122	116	195			80	84
		Over .039	110	122	116	195	98	103		

^a The dimensions and tolerances for material covered by Specification B103 can be found in Specification ASTM B248. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

SEGMENTS FROM ASTM B139^a
PHOSPHOR BRONZE
ROD, BAR & SHAPES
COPPER ALLOYS C51000, C52100, C52400, C53400 & C54400

TENSILE REQUIREMENTS, ALLOY NUMBER C51000

Temper Designation		Diameter Distance Between Parallel Surfaces in Inch	Tensile Strength ksi ^b	Elongation in 4 X Diameter or Thickness, Minimum %
Standard	Former			
O60	Soft	Rounds Under .250	40 - 58	
H04	Hard	Rounds Under .250	80 - 128	
		Rounds & Hexagons .250 to .500	70 Minimum	13
		Over .500 to 1.000	60 Minimum	15
		Over 1.000	55 Minimum	18
		Square & Rectangle .250 to .375	60 Minimum	10
H08	Spring	Over .375	55 Minimum	15
		Rounds Under .026	125 Minimum	
		.026 to .0625	115 Minimum	
		Over .0625 to .125	110 Minimum	
		Over .125 to .250	105 Minimum	3.5
		Over .250 to .375	100 Minimum	5.
		Over .375 to .500	90 Minimum	9.

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

SEGMENTS FROM ASTM B159^a PHOSPHOR BRONZE WIRE

COPPER ALLOYS C51000, C52100 & C52400

TENSILE REQUIREMENTS FOR ROUND OR SQUARE MATERIAL FOR GENERAL PURPOSES

Temper Designation		Tensile Strength, ksi ^b		
Standard	Former	C51000	C52100	C52400
O61	Soft	43 - 58	53 - 68	60 - 75
H01	One-quarter Hard	60 - 76	74 - 91	83 - 102
H02	One-half Hard	80 - 97	95 - 115	108 - 129
H03	Three-quarter Hard	96 - 115	113 - 135	125 - 148
H04	Hard	108 - 128	125 - 150	135 - 160

REQUIREMENTS FOR SPRING TEMPER

(H08)

ALLOY C51000 ROUND OR SQUARE MATERIAL

Diameter or Distance Between Parallel Surfaces in Inch	Tensile Strength, ksi ^b	Elongation in 2 Inch Min %
.025 & Under	145	
Over .025 to .062	135	
Over .062 to .125	130	
Over .125 to .250	125	
Over .250 to .375	120	5
Over .375 to .500	105	9

MECHANICAL STRENGTH REQUIREMENTS FOR FLAT WIRE (OTHER THAN SQUARE WIRE)

Temper Designation		Tensile Strength, ksi ^b		
Standard	Former	C51000	C52100	C52400
O61	Soft	43 - 58	53 - 67	58 - 73
H02	One-half Hard	58 - 73	69 - 84	76 - 91
H04	Hard	76 - 91	85 - 100	94 - 109
H06	Extra Hard	88 - 103	97 - 112	107 - 122
H08	Spring	95 - 110	105 - 119	115 - 129
H10	Extra Spring	100 - 114	116 - 122	120 - 133

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

SEGMENTS FROM ASTM A29^a CARBON & ALLOY STEEL BARS

TOLERANCES

Specified Size, Inch ^b	Permissible Variation from Specified Size, Inch ^b		Out-of-round or Out-of-Square, Inch ^{b,c}
	Over	Under	
.312 & Under	.005	.005	.008
Over .312 to .437, Incl	.006	.006	.009
Over .437 to .625, Incl	.007	.007	.010
Over .625 to .875, Incl	.008	.008	.012
Over .875 to 1.000, Incl	.009	.009	.013
Over 1.000 to 1.125, Incl	.010	.010	.015
Over 1.125 to 1.250, Incl	.011	.011	.016
Over 1.250 to 1.375, Incl	.012	.012	.018
Over 1.375 to 1.500, Incl	.014	.014	.021
Over 1.500 to 2.000, Incl	.0156	.0156	.023
Over 2.000 to 2.500, Incl	.0313	0	.023
Over 2.500 to 3.500, Incl	.0469	0	.035
Over 3.500 to 4.500, Incl	.0625	0	.046
Over 4.500 to 5.500, Incl	.0781	0	.058
Over 5.500 to 6.500, Incl	.125	0	.070
Over 6.500 to 8.250, Incl	.1563	0	.085
Over 8.250 to 9.500, Incl	.1875	0	.100
Over 9.500 to 10.000, Incl	.250	0	.120

Specified Size, Inch ^b	Permissible Variation from Specified Size, Inch ^b		Out-of-hexagon (Carbon Steel and Alloy Steel) or Out-of-Octagon Inch ^{b,d}
	Over	Under	
.500 & Under	.007	.007	.011
Over .500 to 1.000, Incl	.010	.010	.015
Over 1.000 to 1.500, Incl	.021	.013	.025
Over 1.500 to 2.000, Incl	.0313	.0156	.0313
Over 2.000 to 2.500, Incl	.0469	.0156	.0469
Over 2.500 to 3.500, Incl	.0625	.0156	.0625

Specified Width, Inch ^b	Permissible Variations in Thickness for Thickness Given, Over and Under, Inch ^b							Permissible Variations in Width, Inch ^b	
	.203 to .230 Excl	.230 to .250, Excl	.250 to .500, Incl	Over .500 to 1.000, Incl	Over 1.000 to 2.000, Incl	Over 2.000 to 3.000, Incl	Over 3.000	Over	Under
1.000 & Under	.007	.007	.008	.010				.0156	.0156
Over 1.000 to 2.000, Incl	.007	.007	.012	.015	.0313			.0313	.0313
Over 2.000 to 4.000, Incl	.008	.008	.015	.020	.0313	.0469	.0469	.0625	.0313
Over 4.000 to 6.000, Incl	.009	.009	.015	.020	.0313	.0469	.0469	.0938	.0625
Over 6.000 to 8.000, Incl	^e	.015	.016	.025	.0313	.0469	^f	.125 ^f	.0938 ^f

Specified Length of Leg, Inch ^{b,g}	Permissible Variations in Thickness for Thickness Given, Over and Under, Inch ^b			Permissible Variations for Length of Leg, Over and Under, Inch ^b
	.1875 & Under	Over .1875 to .375, Incl	Over .375	
1.000 & Under	.008	.010		.0313
Over 1.000 to 2.000, Incl	.010	.010	.012	.0469
Over 2.000 to 3.000, Excl	.012	.015	.015	.0625

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259. For Mechanical Properties, see page 77 of this section.

^b 1 inch = 25.4 mm.

^c Out-of-round is the difference between the maximum and minimum diameters of the bar, measured at the same cross section. Out-of-square is the difference in the two dimensions at the same cross section of a square bar between opposite faces.

^d Out-of-hexagon or out-of-octagon is the greatest difference between any two dimensions at the same cross section between opposite faces.

^e Flats over 6 to 8 inches (162 to 203 mm), incl, in width, are not available as hot rolled carbon steel bars in thickness under .230 inch (.584 mm).

^f On flats over 6 to 8 inches, incl, in width and over 3 inches (76 mm) in thickness, tolerances shall be negotiated with the manufacturer.

^g The longer leg of an unequal angle determines the size for tolerance. The out-of-square tolerance in either direction is 1.500 degrees (0.03 rad).

SEGMENTS FROM ASTM A29 (cont) **CARBON & ALLOY STEEL (cont)** **BARS (cont)** **TOLERANCES**

Table 11 Permissible Variations in Dimensions for Hot-rolled Bar Size Channels of Carbon Steel

Specified Size of Channel, Inch ^a	Permissible Variations in Size, Over and Under, Inch ^a				Out-of-square of Either Flange, Inch/Inch of Flange Width
	Depth of Section ^b	Width of Flanges	Thickness of Web for Thickness Given		
			To .1875, Incl	Over .1875	
1.500 & Under	.0313	.0313	.010	.015	.0313
Over 1.500 to 3.000, Excl	.0625	.0625	.015	.020	.0313

Table 12 Permissible Variations in Dimensions for Hot-rolled Bar Size Tees of Carbon Steel

Specified Size of Tee, Inch ^{a,d}	Permissible Variations in Size, Inch ^a						Stem Out-of-square ^f
	Width or Depth ^a		Thickness of Flange		Thickness of Stem		
	Over	Under	Over	Under	Over	Under	
1.250 & Under	.0469	.0469	.010	.010	.005	.020	.0313
Over 1.250 to 2.000, Incl	.0625	.0625	.012	.012	.010	.020	.0625
Over 2.000 to 3.000, Excl	.0938	.0938	.015	.015	.015	.020	.0938

Table 13 Permissible Variations in Dimensions for Half-rounds, Ovals, Half-ovals, and Other Special Bar Size Sections

Due to mill facilities, tolerances on half-rounds, ovals, half-ovals, and other special bar size sections vary among the manufacturers and such tolerances should be negotiated between the manufacturer and the purchaser.

Table 14 Permissible Variations in Dimensions for Hot-rolled Rounds, Squares, Hexagons, Flats, and Bar Size Sections of Carbon Steel

Specified Size of Rounds, Squares, and Hexagons, Inch ^a	Specified Size of Flats, Inch ^a		Permissible Variations Over Specified Length, Inch ^{a,g}				
	Thickness	Width	5 to 10 Feet, Excl	10 to 20 Feet, Excl	20 to 30 Feet, Excl	30 to 40 Feet, Excl	40 to 60 Feet, Excl
Mill Shearing							
1.000 & Under	1.000 & Under	To 3.000, Incl	.500	.750	1.250	1.750	2.250
Over 1.000 to 2.000, Incl	Over 1.000	To 3.000, Incl	.625	1.000	1.500	2.000	2.500
	1.000 & Under	Over 3.000 to 6.000, Incl	.625	1.000	1.500	2.000	2.500
Over 2.000 to 5.000, Incl	Over 1.000	Over 3.000 to 6.000, Incl	1.000	1.500	1.750	2.250	2.750
Over 5.000 to 10.000, Incl			2.000	2.500	2.750	3.000	3.250
	.230 to 1.000, Incl	Over 6.000 to 8.000, Incl	.750	1.250	1.750	3.500	4.000
Bar Size Sections	Over 1.000 to 3.000, Incl	Over 6.000 to 8.000, Incl	1.250	1.750	2.000	3.500	4.000
			.625	1.000	1.500	2.000	2.500
Hot Sawing							
2.000 to 5.000, Incl	1.000 & Over	3.000 & Over	^h	1.500	1.750	2.250	2.750
Over 5.000 to 10.000, Incl			^h	2.500	2.750	3.000	3.250

^a 1 inch = 25.4 mm.

^b Measurements for depth of section and width of flanges are over-all.

^c For channels .625 inch (15.9 mm) and under in depth, the out-of-square tolerance is .0469 inch/inch (1.2 mm/mm) of depth.

^d The longer member of the unequal tee determines the size for tolerances.

^e Measurements for both width and depth are over-all.

^f Step out-of-square is the variation from its true position of the center line of the stem measured at the point.

^g No permissible variations under.

^h Smaller sizes and shorter lengths are not hot sawed.

SEGMENTS FROM ASTM A29 (cont)

CARBON & ALLOY STEEL (cont)

BARS (cont)

TOLERANCES

Table 15 Permissible Variations in Length for Recutting of Carbon Bars Meeting Special Straightness Tolerances				
Sizes of Rounds, Squares, Hexagons, Width of Flats and Maximum Dimension of Other Sections, Inch ^a	Tolerances for Specified Length, Inch ^{a,b}			
	To 12 Foot Incl ^c		Over 12 Foot ^c	
	Over	Under	Over	Under
3.000 & Under	.1875	.0625	.250	.0625
Over 3.000 to 6.000, Incl	.250	.0625	.375	.0625
Over 6.000 to 8.000, Incl	.375	.0625	.500	.0625
Over 8.000 to 10.000, Incl	.500	.0625	.625	.0625

Table 16 Permissible Variations Straightness for Hot-rolled Bars and Bar Size Sections of Carbon Steel ^d				
Standard tolerances	.250 Inch ^a in any 5 Feet ^c or (.250 Inch x Length in Feet)/5			
Special tolerances	.125 Inch ^a in any 5 Feet ^c or (.125 Inch x Length in Feet)/5			

Table 17 Permissible Variations in Cross Section for Hot-rolled Round, Square and Round-cornered Square Bars of Alloy Steel			
Specified Size, Inch ^a	Permissible Variations from Specified Size, Inch ^a		Out-of-round or Out-of-Square, Inch ^{a,e}
	Over	Under	
.312 & Under	.005	.005	.008
Over .312 to .437, Incl	.006	.006	.009
Over .437 to .625, Incl	.007	.007	.010
Over .625 to .875, Incl	.008	.008	.012
Over .875 to 1.000, Incl	.009	.009	.013
Over 1.000 to 1.125, Incl	.010	.010	.015
Over 1.125 to 1.250, Incl	.011	.011	.016
Over 1.250 to 1.375, Incl	.012	.012	.018
Over 1.375 to 1.500, Incl	.014	.014	.021
Over 1.500 to 2.000, Incl	.0156	.0156	.023
Over 2.000 to 2.500, Incl	.0313	0	.023
Over 2.500 to 3.500, Incl	.0469	0	.035
Over 3.500 to 4.500, Incl	.0625	0	.046
Over 4.500 to 5.500, Incl	.0781	0	.058
Over 5.500 to 6.500, Incl	.125	0	.070
Over 6.500 to 8.250, Incl	.1563	0	.085
Over 8.250 to 9.500, Incl	.1875	0	.100

Table 18 Permissible Variations in Cross Section for Hot-rolled Hexagonal and Octagonal Bars of Alloy Steel			
Specified Sizes Between Opposite Sides, Inch ^a	Permissible Variations from Specified Sizes, Inch ^a		Out-of-hexagon or Out-of-Octagon ^f
	Over	Under	
.500 & Under	.007	.007	.011
Over .500 to 1.000, Incl	.010	.010	.015
Over 1.000 to 1.500, Incl	.021	.013	.025
Over 1.500 to 2.000, Incl	.0313	.0156	.0313
Over 2.000 to 2.500, Incl	.0469	.0156	.0469
Over 2.500 to 3.500, Incl	.0625	.0156	.0625

^a 1 inch = 25.4 mm.

^b Tolerances are sometimes required all over or all under the specified length, in which case the sum of the two tolerances applies.

^c 1 foot = 305 mm.

^d Because of warpage, straightness tolerances do not apply to bars if any subsequent heating operation or controlled cooling has been performed.

^e Out-of-round is the difference between the maximum and the minimum diameters of the bar, measured at the same cross section. Out-of-square is the difference in the two dimensions as the same cross section of a square bar between opposite faces.

^f Out-of-hexagon or out-of-octagon is the greatest difference between any two dimensions at the same cross section between opposite faces.

SEGMENTS FROM ASTM A29 (cont) **CARBON & ALLOY STEEL (cont)** **BARS (cont)**

TOLERANCES

Table 20 Permissible Variations in Straightness for Hot-rolled Bars and Bar Size Sections of Alloy Steel^a

Standard Tolerances	.250 Inch ^b in any 5 feet or (.250 Inch x length in feet)/5
Special Tolerances	.125 Inch ^b in any 5 feet or (.125 Inch x length in feet)/5

Table 21 Permissible Variations in Length for Hot-rolled Rounds, Squares, Hexagons, Octagons and Flats of Alloy Steel

Specified Size of Rounds, Squares, Hexagons, Octagons, Inch ^b	Tolerance Over Specified Length, Inch ^b No Tolerance Under				
	5 to 10 Foot, ^c Excl	10 to 20 Foot, ^c Excl	20 to 30 Foot, ^c Excl	30 to 40 Foot, ^c Excl	40 to 60 Foot, ^c Incl
Rounds, Squares, Hexagons, Octagons					
Hot Shearing					
1.000 & Under	.500	.750	1.250	1.750	2.250
Over 1.000 to 2.000, Incl	.625	1.000	1.500	2.000	2.500
Over 2.000 to 5.000, Incl	1.000	1.500	1.750	2.250	2.750
Over 5.000 to 9.500, Incl	2.000	2.500	2.750	3.000	3.250
Hot Sawing					
2.000 ^d to 5.000, Incl	1.500	1.500	1.750	2.250	2.750
Over 5.000 to 9.500, Incl	1.500	2.500	2.750	3.000	3.250
Round-edge and Square-edge Flats (Specified Sizes)					
Thickness, Inch ^b	Width, Inch ^b	Hot Shearing			
1.000 & Under	to 3.000, Incl	.500	.750	1.250	1.750
Over 1.000	to 3.000, Incl	.625	1.000	1.500	2.000
1.000 & Under	Over 3.000 to 6.000, Incl	.625	1.000	1.500	2.000
Over 1.000	Over 3.000 to 6.000, Incl	1.000	1.500	1.750	2.250
1.000 & Under	Over 6.000 to 8.000, Incl	.750	1.250	1.750	3.500
Over 1.000 to 3.000, Incl	Over 6.000 to 8.000, Incl	1.250	1.750	2.000	3.500
Hot Sawing					
1.000 ^d and Over	3.000 ^d and Over	1.500	1.500	1.750	2.250
					2.750

Table 22 Length Tolerances for Special Straightened Alloy Bars Machine Cut on Both Ends

Sizes of Rounds, Squares, Hexagons Octagons - Widths of Flats and Maximum Dimensions of Other Bar Section, Inch ^b	Tolerance for Specified Length, Inch ^{b,e}			
	To 12 Foot ^f , Incl		Over 12 Foot ^{c,f}	
	Over	Under	Over	Under
To 3.000, Incl	.1875	.0625	.250	.0625
Over 3.000 to 6.000, Incl	.250	.0625	.375	.0625
Over 6.000 to 8.000, Incl	.375	.0625	.500	.0625
Over 8.000 to 9.500, Incl	.500	.0625	.625	.0625

^a Because of warpage, straightness tolerances do not apply to bars if any subsequent heating operation or controlled cooling has been performed.

^b Inch = 25.4mm.

^c 1 foot = 305 mm.

^d Smaller sizes are not hot sawed.

^e Flats over 6 to 8 inches (162 to 203 mm), incl, in width, are not available as alloy steel bars in thickness under .230 inch (0.584 mm).

^f On flats over 6 to 8 inches, incl, in width and over 3 inch (76 mm) in thickness, tolerances shall be negotiated with the manufacturer.

SEGMENTS FROM ASTM A29 (cont) **CARBON & ALLOY STEEL (cont)** **BARS (cont)**

SIZE TOLERANCES FOR COLD-FINISHED CARBON STEEL BARS COLD-DRAWN SIZE TOLERANCES

Size, Inch ^a	Maximum of Carbon Range .28% or Less	Maximum of Carbon Range Over .28% to .55%, Incl	Maximum of Carbon Range to .55% Incl, Stress Relieved or Annealed After Cold Finishing	Maximum of Carbon Range Over .55% or all Grades Quenched and Tempered or Normalized and Tempered Before Cold Finishing
	All Tolerances are Inch ^a and are Minus			
Rounds				
To 1.500, incl	.002	.003	.004	.005
Over 1.500 to 2.500, incl	.003	.004	.005	.006
Over 2.500 to 4.000, incl	.004	.005	.006	.007
Hexagons				
To .750, incl	.002	.003	.004	.006
Over .750 to 1.500, incl	.003	.004	.005	.007
Over 1.500 to 2.500, incl	.004	.005	.006	.008
Over 2.500 to 3.125, incl	.005	.006	.007	.009
Squares				
To .750, incl	.002	.004	.005	.007
Over .750 to 1.500, incl	.003	.005	.006	.008
Over 1.500 to 2.500, incl	.004	.006	.007	.009
Over 2.500 to 4.000, incl	.006	.008	.009	.011
Flats				
Width				
To .750, incl	.003	.004	.006	.008
Over .750 to 1.500, incl	.004	.005	.008	.010
Over 1.500 to 3.000, incl	.005	.006	.010	.012
Over 3.000 to 4.000, incl	.006	.008	.011	.016
Over 4.000 to 6.000, incl	.008	.010	.012	.020
Over 6.000	.013	.015		

^a 1 inch = 25.4 mm.

SEGMENTS FROM ASTM A29 (cont) **CARBON & ALLOY STEEL (cont)** **BARS (cont)**

TOLERANCES

ALLOY STEEL COLD-FINISHED BARS COLD-DRAWN SIZE TOLERANCES

Size, Inch ^a	Maximum of Carbon Range .28% or Less	Maximum of Carbon Range Over .28% To .55%, Incl	Maximum of Carbon Range to .55% Incl, Stress Relieved or Annealed After Cold Finishing	Maximum of Carbon Range Over .55% with or without stress relieving or Annealing after Cold Finishing. Also, All Carbons, Quenched and Tempered (Heat Treated), or Normalized and Tempered, Before Cold Finishing
All Tolerances are Inch ^a and are Minus				
Rounds				
To 1.000, incl in Coils	.002	.003	.004	.005
Cut Lengths:				
Over 1.500, incl	.003	.004	.005	.006
Over 1.500 to 2.500, incl	.004	.005	.006	.007
Over 2.500 to 4.000, incl	.005	.006	.007	.008
Hexagons				
To .750, incl	.003	.004	.005	.007
Over .750 to 1.500, incl	.004	.005	.006	.008
Over 1.500 to 2.500, incl	.005	.006	.007	.009
Over 2.500 to 3.875, incl	.006	.007	.008	.010
Over 3.875 to 4.000, incl	.006			
Squares				
To .750, incl	.003	.005	.006	.008
Over .750 to 1.500, incl	.004	.006	.007	.009
Over 1.500 to 2.500, incl	.005	.007	.008	.010
Over 2.500 to 4.000, incl	.007	.009	.010	.012
Over 4.000 to 5.000, incl	.011			
Flats				
To .750, incl	.004	.005	.007	.009
Over .750 to 1.500, incl	.005	.006	.009	.011
Over 1.500 to 3.000, incl	.006	.007	.011	.013
Over 3.000 to 4.000, incl	.007	.009	.012	.017
Over 4.000 to 6.000, incl	.009	.011	.013	.021
Over 6.000	.014			

^a 1 inch = 25.4 mm.

SEGMENTS FROM ASTM A109^a
.25% MAXIMUM CARBON STEEL
COLD ROLLED STRIP
MECHANICAL PROPERTIES

Approximate Mechanical Properties for Various Tempers of Cold-rolled Carbon Strip			
NOTE: These values are given as information only and are not intended as criteria for acceptance or rejection.			
Temper	Tensile Strength, psi ^b	Elongation in 2.000 Inch for .050 Inch Thickness of Strip %	Remarks
No. 1 (Hard)	90,000 ± 10,000		A very stiff, cold-rolled strip intended for flat blanking only, and not requiring ability to withstand cold forming.
No. 2 (One-half Hard)	65,000 ± 10,000	10 ± 6	A moderately stiff cold-rolled strip intended for limited bending.
No. 3 (One-quarter Hard)	55,000 ± 10,000	20 ± 7	A medium soft cold-rolled strip intended for limited bending, shallow drawing and stamping.
No. 4 (Skin-rolled)	48,000 ± 6,000	32 ± 8	A soft ductile cold-rolled strip intended for deep drawing where no surface strain or fluting is permissible.
No. 5 (Dead-soft)	44,000 ± 6,000	39 ± 6	A soft ductile cold-rolled strip intended for deep drawing where stretcher strains or fluting are permissible. Also for extrusions.

THICKNESS TOLERANCES

Specified Thickness, Inch ^c		Thickness Tolerances, Over and Under, Inch ^{c,d} Specified Width, Inch ^c				
Under	To and Inclusive	Under 1.000 to .500 Exclusive	Under 3.000 to 1.000 Inclusive	3.000 to 6.000 Inclusive	Over 6.000 to 9.000 Inclusive	Over 9.000 to 12.000 Inclusive
.250	.200	.003	.004	.0045	.0045	.005
.200	.161	.002	.0035	.004	.004	.0045
.161	.100	.002	.002	.003	.003	.003
.100	.069	.002	.002	.0025	.003	.003
.069	.050	.002	.002	.0025	.0025	.0025
.050	.040	.002	.002	.0025	.0025	.0025
.040	.035	.002	.002	.002	.002	.002
.035	.032	.0015	.0015	.002	.002	.002
.032	.029	.0015	.0015	.0015	.002	.002
.029	.026	.001	.0015	.0015	.002	.002
.026	.023	.001	.001	.001	.0015	.0015
.023	.020	.001	.001	.001	.0015	.0015
.020	.013	.00075	.00075	.00075	.001	.001
.013	.009	.00075	.00075	.00075	.001	.001
.009	.007	.00075	.00075	.00075		
.007		.0005	.0005	.0005		

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b ksi = 1000 psi.

^c 1 Inch = 25.44 mm.

^d Measured .375 inch or more in from the edge on 1 inch or wider and on narrower than 1 inch at any place between the edges.

SEGMENTS FROM ASTM A228^a

STEEL

WIRE, MUSIC SPRING QUALITY

PERMISSIBLE VARIATIONS IN WIRE DIAMETER^b

Square Inch Units		
Diameter, mm and Minus, mm	Permissible Variations, Plus mm	Permissible Out-of-Round
To .250, incl	.005	.005
Over .250 to .700, incl	.008	.008
Over .700 to 1.500, incl	.010	.010
Over 1.500 to 2.000, incl	.013	.013
Over 2.000	.030	.030
Inch-pound Units		
Diameter, mm and Minus, Inch	Permissible Variations, Plus Inch	Permissible Out-of-Round
.004 to .010, incl	.0002	.0002
Over .010 to .028, incl	.0003	.0003
Over .028 to .063, incl	.0004	.0004
Over .063 to .080, incl	.0005	.0005
Over .080 to .250, incl	.001	.001

TENSILE REQUIREMENTS

Inch-pound Units					
Diameter, Inch ^c	Tensile Strength, ksi		Diameter, Inch ^c	Tensile Strength, ksi	
	Minimum	Maximum		Minimum	Maximum
.004	439	485	.005	300	331
.005	426	471	.059	296	327
.006	415	459	.063	293	324
.007	407	449	.067	290	321
.008	399	441	.072	287	317
.009	393	434	.076	284	314
.010	387	428	.080	282	312
.011	382	422	.085	279	308
.012	377	417	.090	276	305
.013	373	412	.095	274	303
.014	369	408	.100	271	300
.015	365	404	.102	270	299
.061	362	400	.107	268	296
.108	356	393	.110	267	295
.020	350	387	.112	266	294
.002	345	382	.121	263	290
.024	341	377	.125	261	288
.026	337	373	.130	259	286
.028	333	368	.135	258	285
.030	330	365	.140	256	283
.032	327	361	.145	254	281
.034	324	358	.150	253	279
.036	321	355	.156	251	277
.038	318	352	.162	249	275
.040	315	349	.177	245	270
.042	313	346	.192	241	267
.045	309	342	.207	238	264
.048	306	339	.225	235	260
.051	303	335	.250	230	255

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b For purposes of determining conformance with this specification, all specified limits are absolute as defined in Recommended Practice E 29.

^c Tensile strength values for intermediate diameters may be interpolated.

SEGMENTS FROM ASTM A229^a

STEEL

WIRE, OIL TEMPERED

TENSILE REQUIREMENTS, INCH-POUND UNITS

Diameter, ^b Inch	Class I		Class II	
	Tensile Strength, ksi		Tensile Strength, ksi	
	Minimum	Maximum	Minimum	Maximum
.020	293	323	324	354
.023	289	319	320	350
.026	286	316	317	347
.029	283	313	314	344
.032	280	310	311	341
.035	274	304	305	335
.041	266	296	297	327
.048	259	289	290	320
.054	253	283	284	314
.062	247	277	278	308
.072	241	271	272	302
.080	235	265	266	296
.092	230	260	261	291
.106	225	255	256	286
.120	220	250	251	281
.135	215	240	241	266
.148	210	235	236	261
.162	205	230	231	256
.177	200	225	226	251
.192	195	220	221	246
.207	190	215	216	241
.225	188	213	214	239
.244	187	212	213	238
.250	185	210	211	236
.312	183	208	209	234
.375	180	205	206	231
.438	175	200	201	226
.500	170	195	196	221
.562	165	190	191	216
.625	165	190	191	216

PERMISSIBLE VARIATIONS IN WIRE DIAMETER, INCH-POUND UNITS^c

Variations, Plus and Minus Diameter, Inch	Permissible Out-of-Round, Inch	Inch
.010 to .028, incl	.0008	.0008
Over .028 to .075, incl	.001	.001
Over .075 to .375, incl	.002	.002
Over .375	.003	.003

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Tensile strength values for intermediate diameters may be interpolated.

^c For purposes of determining conformance with this specification, all specified limits are absolute as defined in Recommended Practice E 29.

SEGMENTS FROM ASTM A500^a CARBON STEEL COLD-FORMED WELDED AND SEAMLESS STRUCTURAL TUBING IN ROUNDS AND SHAPES

OUTSIDE DIAMETER TOLERANCES FOR ROUND HOT-FINISHED TUBING

TENSILE REQUIREMENTS

Round Structural Tubing			
	Grade A	Grade B	Grade C
Tensile Strength, Min, psi (MPa)	45 000 (310)	58 000 (400)	62 000 (427)
Yield Strength, Min, psi (MPa)	33 000 (228)	42 000 (290)	46 000 (317)
Elongation in 2.000 Inch (50.8 mm), Min. %	25 ^b	23 ^c	21 ^d
Shaped Structural Tubing			
	Grade A	Grade B	Grade C
Tensile Strength, Min, psi (MPa)	45 000 (310)	58 000 (400)	62 000 (427)
Yield Strength, Min, psi (MPa)	39 000 (269)	46 000 (317)	50 000 (345)
Elongation in 2.000 Inch (50.8 mm), Min. %	25 ^b	23 ^c	21 ^d

CALCULATED MINIMUM VALUES FOR LONGITUDINAL STRIP TESTS

Wall Thickness, Inch (mm)	Elongation in 2 Inch (50.8 mm), Min. %	
	Grade A	Grade B
.180 (4.57)		23
.165 (4.19)		22
.148 (3.76)		21
.134 (3.40)		20
.120 (3.05)	25	19.5
.109 (2.77)	23.5	19
.095 (2.41)	23	18
.083 (2.11)	22	17
.065 (1.65)	21	16
.049 (1.24)	20	15
.035 (0.89)	19.5	14

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Applies to specified wall thicknesses 0.120 inches (3.05 mm) and over. For wall thicknesses under 0.120 inches, the minimum elongation shall be calculated by the formula: percent elongation in 2 inches = $56t + 17.5$.

^c Applies to specified wall thicknesses 0.180 inches (4.57 mm) and over. For wall thicknesses under 0.180 inches, the minimum elongation shall be calculated by the formula: percent elongation in 2 inches = $61t + 12$.

^d Applies to specified wall thicknesses 0.120 inches (3.05 mm) and over. For lighter wall thicknesses, elongation shall be by agreement with the manufacturer.

SEGMENTS FROM ASTM A500 (cont)
CARBON STEEL (cont)
COLD-FORMED WELDED AND SEAMLESS STRUCTURAL TUBING IN ROUNDS AND SHAPES (cont)

SPECIFIED MILL LENGTH TOLERANCES FOR STRUCTURAL TUBING

	22 Feet (6.7 m) and Under		Over 22 to 44 Feet (6.7 to 13.4 m), Incl	
	Over	Under	Over	Under
Length tolerance for specified mill length, Inch (mm)	.500 (12.7)	.250 (6.4)	.750 (19.0)	.250 (6.4)

SQUARE AND RECTANGULAR STRUCTURAL TUBING
OUTSIDE DIMENSION TOLERANCES

Largest Outside Dimension, Across Flats, Inch (mm)	Tolerance, ^a Plus and Minus, Inch (mm)
2.500 (63.5) and under	.020 (.51)
Over 2.500 to 3.500 (63.5 to 88.9), Incl.	.025 (.64)
Over 3.500 to 5.500 (88.9 to 139.7), Incl.	.030 (.76)
Over 5.500 (139.7)	1%

^a Tolerances include allowance for convexity or concavity. For rectangular sections, the tolerance calculated for the larger flat dimension shall also apply to the smaller flat dimension. This tolerance may be increased 50% when applied to the smaller dimension, if the ratio of the external sides is in the range from 1.5 to 3, inclusive, and 100% when the ratio exceeds 3.

SEGMENTS FROM ASTM A510^a

CARBON STEEL

RODS & COARSE ROUND WIRE

THICKNESS TOLERANCES

Sizes of Wire Rods			
Inch Fraction	Decimal Equivalent, Inch	Inch Fraction	Decimal Equivalent, Inch
7/32	.2188	31/64	.4844
15/64	.2344	1/2	.500
1/4	.250	33/64	.5156
17/64	.2656	17/32	.5326
9/32	.2813	35/64	.5469
19/64	.2969	9/16	.5625
5/16	.3125	37/64	.5781
21/64	.3281	19/32	.5938
11/32	.3438	39/64	.6094
23/64	.3594	5/8	.625
3/8	.375	41/64	.6406
25/64	.3906	21/32	.6563
13/32	.4062	43/64	.6719
27/64	.4219	11/16	.6875
7/16	.4375	45/64	.7031
29/64	.453	23/32	.719
15/32	.469	47/64	.7344

Permissible Variations in Diameter for Uncoated Coarse Round Wire		
Permissible Diameter of Wire, Inch	Variations Plus & Minus, Inch	Permissible Out-of-round, Inch
In Coils		
.035 to Under .076	.001	.001
.076 to Under 0.500	.002	.002
.500 and Over	.003	.003
Straightened and Cut		
Diameter of Wire, Inch	Permissible Variations Plus & Minus, Inch	Permissible Out-of-round, Inch
.035 to Under .076	.001	.001
.076 to .148, Incl	.002	.002
Over .148 to Under .500	.003	.003
.500 and Over	.004	.004

Permissible Variations in Diameter for Wire Rod in Coils			
Diameter of Rod		Permissible Variation Plus & Minus, Inch	Permissible Out-of-round, Inch
Fraction	Decimal		
7/32 to 47/64 Incl	.2188 to .7344 Incl	.016	.025

Permissible Variations in Length for Straightened and Cut Wire	
Cut Length, Foot	Permissible Variations, Plus & Minus, Inch
Under 3.000	.062
3.000 to 12.000, Incl	.093
Over 12.000	.125

Permissible Variations for Burrs for Straightened and Cut Wire	
Diameter of Wire, Inch	Permissible Variation Over Measured Diameter, Inch
Up to .125, Incl	.004
Over .125 to .250, Incl	.006
Over .250 to .500, Incl	.008
Over .500	.010

^a For purposes of determining conformance with this specification, all specified limits are absolute as defined in Recommended Practice E29. The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

SEGMENTS FROM ASTM A513^a CARBON AND ALLOY STEEL ELECTRIC-RESISTANCE-WELDED MECHANICAL TUBING

DIAMETER TOLERANCES FOR TYPE I (A.W.H.R.) ROUND TUBING

NOTE: Measurements for diameter are to be taken at least 2 inches^b from the ends of the tubes.

Outside Diameter Range, Inch ^b	Wall Thickness		Flash-in- Tubing ^{c,d}	Flash Controlled to .010 Inch Max Tubing ^{d,f}	Flash Controlled to .005 Inch MaxTubing ^{e,f}	
	Bwg ^g	Inch ^b	Outside Diameter Plus and Minus	Outside Diameter Plus and Minus	Outside Diameter Plus and Minus	Inside Diameter Plus and Minus
.750 to 1.125, Incl	16 to 10	.065 to .134	.0035		.0035	.020
Over 1.125 to 2.000, Incl	16 to 14	.065 to .083	.005	.005	.005	.021
Over 1.125 to 2.000, Incl	13 to 7	.095 to .180	.005	.005	.005	.025
Over 1.125 to 2.000, Incl	6 to 5	.203 to .220	.005	.005	.005	.029
Over 1.125 to 2.000, Incl	4 to 3	.238 to .259	.005	.005	.005	.039
Over 2.000 to 2.500, Incl	16 to 14	.065 to .083	.006	.006	.006	.022
Over 2.000 to 2.500, Incl	13 to 5	.095 to .220	.006	.006	.006	.024
Over 2.000 to 2.500, Incl	4 to 3	.238 to .259	.006	.006	.006	.040
Over 2.500 to 3.000, Incl	16 to 14	.065 to .083	.008	.008	.008	.024
Over 2.500 to 3.000, Incl	13 to 5	.095 to .220	.008	.008	.008	.026
Over 2.500 to 3.000, Incl	4 to 3	.238 to .259	.008	.008	.008	.040
Over 2.500 to 3.000, Incl	2 to .320	.284 to .320	.010	.010	.010	.048
Over 3.000 to 3.500, Incl	16 to 14	.065 to .083	.009	.009	.009	.025
Over 3 to 3.500, Incl	13 to 5	.095 to .220	.009	.009	.009	.027
Over 3 to 3.500, Incl	4 to 3	.238 to .259	.009	.009	.009	.043
Over 3 to 3.500, Incl	2 to .360	.284 to .360	.012	.012	.012	.050
Over 3.500 to 4, Incl	16 to 14	.065 to .083	.010	.010	.010	.026
Over 3.500 to 4, Incl	13 to 5	.095 to .220	.010	.010	.010	.028
Over 3.500 to 4, Incl	4 to 3	.238 to .259	.010	.010	.010	.044
Over 3.500 to 4, Incl	2 to .500	.284 to .500	.015	.015	.015	.053
Over 4 to 5, Incl	16 to 14	.065 to .083	.020	.020	.020	.036
Over 4 to 5, Incl	13 to 5	.095 to .220	.020	.020	.020	.045
Over 4 to 5, Incl	4 to 3	.238 to .259	.020	.020	.020	.054
Over 4 to 5, Incl	2 to .500	.284 to .500	.020	.020	.020	.058
Over 5 to 6, Incl	16 to 10	.065 to .134	.020	.020	.020	.036
Over 5 to 6, Incl	9 to 5	.148 to .220	.020	.020	.020	.040
Over 5 to 6, Incl	4 to 3	.238 to .259	.020	.020	.020	.054
Over 5 to 6, Incl	2 to .500	.284 to .500	.020	.020	.020	.058
Over 6 to 8, Incl	11 to 10	.120 to .134	.025	.025	.025	.043
Over 6 to 8, Incl	9 to 5	.148 to .220	.025	.025	.025	.045
Over 6 to 8, Incl	4 to 3	.238 to .259	.025	.025	.025	.059
Over 6 to 8, Incl	2 to .500	.284 to .500	.025	.025	.025	.063

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b 1 inch = 25.4 mm.

^c Flash-In-Tubing is produced only to outside diameter tolerances and wall thickness tolerances and the inside diameter welding flash does not exceed the wall thickness or 3/32 inch, whichever is less.

^d Flash Controlled to .010 inch max tubing consists of tubing over 1-1/8 inch outside diameter which is commonly produced only to outside diameter tolerances and wall thickness tolerances, in which the height of the remaining welding flash is controlled not to exceed .010 inch.

^e Flash Controlled to .005 inch max tubing is produced to outside diameters and wall thickness tolerance, inside diameter and wall thickness tolerances, or outside diameters and inside diameter tolerances, in which the height of the remaining flash is controlled not to exceed .005 inches. Any remaining flash is considered to be part of the applicable inside diameter tolerances.

^f No Flash tubing is further processed for closer tolerances with mandrel-tubing produced to outside diameter and wall, inside diameter and wall, or outside diameter and inside diameter to tolerances with no dimensional indication of inside diameter flash. This condition is available in Types 5 and 6.

^g Birmingham Wire Gauge.

^h The ovality shall be within the above tolerances except when the wall thickness is less than 3% of the outside diameter.

SEGMENTS FROM ASTM A513 (cont)

CARBON AND ALLOY STEEL (cont)

ELECTRIC-RESISTANCE-WELDED MECHANICAL TUBING (cont)

DIAMETER TOLERANCES FOR TYPES 3, 4, 5, and 6 (S.D.H.R., S.D.C.R, M.D. and S.S.I.D.) ROUND TUBING

NOTE: Measurements for diameter are to be taken at least 2 inches from the ends of the tubes.

OD Size Range ^a	Wall Percent of OD	Types 3, 4, (Sink Drawn) ^{a,b} and 5,6 (Mandrel Drawn) ^{b,c} OD, Inch		Types 5 and 6 (Mandrel Drawn) ^{b,c} ID, Inch	
		Over	Under	Over	Under
Up to .499	All	.004	.000		
.500 to 1.699	All	.005	.000	.000	.005
1.700 to 2.099	All	.006	.000	.000	.006
2.100 to 2.499	All	.007	.000	.000	.007
2.500 to 2.899	All	.008	.000	.000	.008
2.900 to 3.299	All	.009	.000	.000	.009
3.300 to 3.699	All	.010	.000	.000	.010
3.700 to 4.099	All	.011	.000	.000	.011
4.100 to 4.499	All	.012	.000	.000	.012
4.500 to 4.899	All	.013	.000	.000	.013
4.900 to 5.299	All	.014	.000	.000	.014
5.300 to 5.549	All	.015	.000	.000	.015
5.550 to 5.999	Under 6	.010	.010	.010	.010
	6 and Over	.009	.009	.009	.009
6.000 to 6.499	Under 6	.013	.013	.013	.013
	6 and Over	.010	.010	.010	.010
6.500 to 6.999	Under 6	.015	.015	.015	.015
	6 and Over	.012	.012	.012	.012
7.000 to 7.499	Under 6	.018	.018	.018	.018
	6 and Over	.013	.013	.013	.013
7.500 to 7.999	Under 6	.020	.020	.020	.020
	6 and Over	.015	.015	.015	.015
8.000 to 8.499	Under 6	.023	.023	.023	.023
	6 and Over	.016	.016	.016	.016
8.500 to 8.999	Under 6	.025	.025	.025	.025
	6 and Over	.017	.017	.017	.017
9.000 to 9.499	Under 6	.028	.028	.028	.028
	6 and Over	.019	.019	.019	.019
9.500 to 9.999	Under 6	.030	.030	.030	.030
	6 and Over	.020	.020	.020	.020
10.000 to 10.999	All	.034	.034	.034	.034
11.000 to 11.999	All	.035	.035	.035	.035
12.000 to 12.5000	All	.037	.037	.037	.037

^a Tubing, flash in or flash controlled which is further processed without mandrel to obtain tolerances closer than those shown on Pages 83 and 85.

^b The ovality shall be within the above tolerances except when the wall thickness is less than 3% of the outside diameter.

^c Tubing produced to outside diameter and wall thickness, or inside diameter and wall thickness, or outside diameter and inside diameter, with mandrel to obtain tolerances closer than those shown on Pages 83 and 85 and no dimensional indication of inside diameter flash.

SEGMENTS FROM ASTM A513 (cont)
CARBON AND ALLOY STEEL (cont)
ELECTRIC-RESISTANCE-WELDED MECHANICAL TUBING (cont)
WALL THICKNESS TOLERANCE FOR TYPE I (A.W.H.R.) ROUND TUBING

Wall Thickness		.750 to 1.000, Incl		Over 1.000 to 1.9375, Incl		Over 1.9375 to 3.750, Incl		Over 3.750 to 4.500, Incl		Over 4.500 to 6.000, Incl		Over 6.000 to 8.000, Incl	
Inch ^a	Bwg ^b	Wall Thickness Tolerances, Inch, Plus and Minus											
		Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus
.065	16	.005	.009	.004	.010	.003	.011	.002	.002	.0012			
.072	15	.005	.009	.004	.010	.003	.011	.002	.012	.002	.012		
.083	14	.006	.010	.005	.011	.004	.012	.003	.013	.003	.013		
.095	13	.006	.010	.005	.011	.004	.012	.003	.013	.003	.013		
.109	12	.006	.010	.005	.011	.004	.012	.003	.013	.003	.013	.003	.013
.120	11	.006	.010	.005	.011	.004	.012	.003	.013	.003	.013	.003	.013
.134	10	.006	.010	.005	.011	.004	.012	.003	.013	.003	.013	.003	.013
.148	9			.006	.012	.005	.013	.004	.014	.004	.014	.004	.014
.165	8			.006	.012	.005	.013	.004	.014	.004	.014	.004	.014
.180	7			.006	.012	.005	.013	.004	.014	.004	.014	.004	.014
.203	6					.007	.015	.006	.016	.005	.017	.005	.017
.220	5					.007	.015	.006	.016	.005	.017	.005	.017
.238	4					.012	.020	.011	.021	.010	.022	.010	.022
.259	3					.013	.021	.012	.022	.011	.023	.011	.023
.284	1					.014	.022	.013	.023	.012	.024	.012	.024
.300	1					.015	.023	.014	.024	.013	.025	.013	.025
.320						.016	.024	.015	.025	.014	.026	.014	.026
.344						.017	.025	.016	.026	.015	.027	.015	.027
.360						.017	.025	.016	.026	.015	.027	.015	.027
.375								.016	.026	.015	.027	.015	.027
.406								.017	.027	.016	.028	.016	.028
.438								.017	.027	.016	.028	.016	.028
.469										.016	.028	.016	.028
.500										.016	.028	.016	.028

^a 1 inch = 25.4 mm.^b Birmingham Wire Gauge.

SEGMENTS FROM ASTM A513 (cont)

CARBON AND ALLOY STEEL (cont)

ELECTRIC-RESISTANCE-WELDED MECHANICAL TUBING (cont)

HARDNESS LIMITS AND TENSILE PROPERTIES FOR ROUND TUBING

NOTE 1: These values are based on normal mill stress relieving temperatures. For particular applications, properties may be adjusted by negotiation between purchaser and producer.

NOTE 2: For longitudinal strip tests, the width of the gage section shall be 1.000 inch (25.4 mm) and a deduction of .500 percentage points from the basic minimum elongation for each .03125 inch (0.8 mm) decrease in wall thickness under .3125 inch (7.9 mm) in wall thickness shall be permitted.

Grade Designation	Yield Strength, ksi (MPa), Min	Ultimate Strength, ksi (MPa), Min	Elongation in 2 Inch or 50 mm, Minimum	RB Minimum	RB Maximum
As-Welded Tubing					
1008	30 (207)	42 (290)	15	50	
1020	38 (262)	52 (359)	12	62	
1035	50 (345)	66 (455)	10	75	
Normalized Tubing					
1008	23 (159)	38 (262)	30		65
1020	35 (241)	50 (345)	25		75
1035	45 (310)	65 (448)	20		88
Sink-Drawn Tubing					
1008	38 (262)	48 (331)	8	65	
1020	50 (345)	60 (414)	8	70	
1035	70 (483)	80 (552)	7	82	
Mandrel-Drawn Tubing					
1008	50 (345)	60 (414)	5	73	
1020	60 (414)	70 (483)	5	80	
1035	80 (552)	90 (621)	5	90	
Mandrel-Drawn Stress-Relieved Tubing					
1008	45 (310)	55 (379)	12	68	
1020	55 (379)	65 (448)	10	75	
1035	75 (517)	85 (586)	10	85	

SEGMENTS FROM ASTM A519^a

CARBON AND ALLOY STEEL

SEAMLESS MECHANICAL TUBING

OUTSIDE DIAMETER TOLERANCES FOR ROUND HOT-FINISHED TUBING^{b,c,d}

Outside Diameter Size Range, Inch (mm)	Outside Diameter Tolerance, Inch (mm)	
	Over	Under
Up to 2.999 (76.17)	.020 (0.51)	.020 (.51)
3.000 - 4.499 (76.20 - 114.27)	.025 (.64)	.025 (.64)
4.500 - 5.999 (114.30 - 152.37)	.031 (.79)	.031 (.79)
6.000 - 7.499 (152.40 - 190.97)	.037 (.94)	.037 (.94)
7.500 - 8.999 (190.50 - 228.57)	.045 (1.14)	.045 (1.14)
9.000 - 10.750 (228.60 - 273.05)	.050 (1.27)	.050 (1.27)

WALL THICKNESS TOLERANCES FOR ROUND-HOT-FINISHED TUBING

Wall Thickness Range as Percent of Outside Diameter	Wall Thickness Tolerance, ^e percent Over and Under Nominal		
	Outside Diameter 2.999 Inch (76.19 mm) and Smaller	Outside Diameter 3.000 Inch (76.20 mm) to 5.999 Inch (152.37 mm)	Outside Diameter 6.000 Inch (152.40 mm) to 10.750 Inch (273.05 mm)
Under 15.000 15.000 and Over	12.500 10.000	10.000 7.500	10.000 10.000

WALL THICKNESS TOLERANCES FOR ROUND COLD-WORKED TUBING

Wall Thickness Range as % of Outside Diameter	Wall Thickness Tolerance, Over and Under Nominal, %	
	Up to 1.499 Inch, ID	1.500 Inch and Over
25.000 and Under Over 25.000	10.000 12.500	7.500 10.000

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Diameter tolerances are not applicable to normalized and tempered or quenched and tempered conditions.

^c The common range of sizes of hot finished tubes is 1.500 inches (38.1 mm) to 10.250 inches (273.0 mm) outside diameter with wall thickness at least 3% or more of outside diameter, but not less than 0.095 inches (2.41 mm).

^d Larger sizes are available; consult manufacturer for sizes and tolerances.

^e Wall thickness tolerances may not be applicable to walls 0.199 inches (5.05 mm) and less; consult manufacturer for wall tolerances on such tube sizes.

SEGMENTS FROM ASTM A519 (cont) **CARBON AND ALLOY STEEL (cont)** **SEAMLESS MECHANICAL TUBING (cont)**

LENGTH TOLERANCES FOR ROUND HOT-FINISHED OR COLD-FINISHED TUBING

NOTE: The producer should be consulted for length tolerances for tubes produced by liquid- or air-quenching heat treatment.

Length, Foot (m)	Outside Diameter, Inch (mm)	Tolerance, Inch (mm)	
		Over	Under
4.000 (1.2) and Under	Up to 2 (50.8), Incl	.0625 (1.6)	0
4.000 (1.2) and Under	Over 2.000 to 4.000 (50.8 to 101.6), Incl	.0938 (2.4)	0
4.000 (1.2) and under	Over 4.000 (101.6)	.125 (3.2)	0
Over 4.000 to 10.000 (1.2 to 3.0), Incl	Up to 2.000 (50.8), Incl	.0938 (2.4)	0
Over 4.000 to 10.000 (1.2 to 3.0), Incl	Over 2.000 (50.8)	.125 (3.2)	0
Over 10.000 to 24.000 (3.0 to 7.3), Incl	All Sizes	.1875 (4.8)	0
Over 24.000 (7.3)	All Sizes	.1875 + .500 (4.8 + 12.7) for each 10 Foot (3.0 m) or fraction over 24 Foot (7.3 m)	

SEGMENTS FROM ASTM A519 (cont) **CARBON AND ALLOY STEEL (cont)** **SEAMLESS MECHANICAL TUBING (cont)**

**TYPICAL TENSILE PROPERTIES, HARDNESS AND THERMAL CONDITION FOR
SOME OF THE MORE COMMON GRADES OF CARBON AND ALLOY STEELS**

Grade Designation	Condition	Ultimate Strength		Yield Strength		Elongation in 2 Inch or 50 mm, %	Rockwell, Hardness B Scale
		ksi	MPa	ksi	MPa		
1020	Hot Rolled	50	345	32	221	25	55
	Cold Worked	70	483	60	414	5	75
	Stress Relieved	65	448	50	345	10	72
	Annealed	48	331	28	193	30	50
	Normalized	55	379	34	234	22	60
1025	Hot Rolled	55	379	35	241	25	60
	Cold Worked	75	517	65	448	5	80
	Stress Relieved	70	483	55	379	8	75
	Annealed	53	365	30	207	25	57
	Normalized	55	379	36	248	22	60
1035	Hot Rolled	65	448	40	276	20	72
	Cold Worked	85	586	75	517	5	88
	Stress Relieved	75	517	65	448	8	80
	Annealed	60	414	33	228	25	67
	Normalized	65	448	40	276	20	72
1045	Hot Rolled	75	517	45	310	15	80
	Cold Worked	90	621	80	552	5	90
	Stress Relieved	80	552	70	483	8	85
	Annealed	65	448	35	241	20	72
	Normalized	75	517	48	331	15	80
1050	Hot Rolled	80	552	50	345	10	85
	Stress Relieved	82	565	70	483	6	86
	Annealed	68	469	38	262	18	74
	Normalized	78	538	50	345	12	82
1118	Hot Rolled	50	345	35	241	25	55
	Cold Worked	75	517	60	414	5	80
	Stress Relieved	70	483	55	379	8	75
	Annealed	50	345	30	207	25	55
	Normalized	55	379	35	241	20	60
1137	Hot Rolled	70	483	40	276	20	75
	Cold Worked	80	552	65	448	5	85
	Stress Relieved	75	517	60	414	8	80
	Annealed	65	448	35	241	22	72
	Normalized	70	483	43	296	15	75
4130	Hot Rolled	90	621	70	483	20	89
	Stress Relieved	105	724	85	586	10	95
	Annealed	75	517	55	379	30	81
	Normalized	90	621	60	414	20	89
4140	Hot Rolled	120	855	90	621	15	100
	Stress Relieved	120	855	100	689	10	100
	Annealed	80	552	60	414	25	85
	Normalized	120	855	90	621	20	100

SEGMENTS FROM ASTM A568^a

CARBON & HIGH STRENGTH LOW ALLOY STEEL

SHEET

THICKNESS TOLERANCES FOR COLD-ROLLED MATERIAL OVER 12 INCHES WIDTH

Specified Width, Inch	Thickness Tolerances Over, Inch No Tolerance Under Specified Minimum Thickness, Inch					
	Over .098 to .142 Inclusive	Over .071 to .098 Inclusive	Over .057 to .071 Inclusive	Over .039 to .057 Inclusive	Over .019 to .039 Inclusive	Over .014 to .019 Inclusive
Over 12.000 to 15.000, Incl	.010	.010	.010	.008	.006	.004
Over 15.000 to 72.000, Incl	.012	.010	.010	.008	.006	.004
Over 72.000	.014	.012	.010	.008	.006	
Note 1. Thickness is measured at any point across the width not less than .375 inch from a side edge. Note 2. The specified thickness range captions noted above also apply when sheet is specified to a nominal thickness, and the above tolerances are divided equally over and under (based upon ASTM A568).						

FOR COLD ROLLED MATERIAL UNDER 12 INCHES WIDTH

Thickness Tolerances of Cold-Rolled Sheet (Carbon and High-Strength Low-Alloy Steel) ^b Coils and Cut Lengths 2.000 Inches to 12.000 Inch in Width				
Specified Width, Inch	Thickness Tolerances Over, Inch, No Tolerances Under Specified Minimum Thickness, Inch			
	Over .057 to .082 Inclusive	Over .039 to .075 Inclusive	Over .019 to .039 Inclusive	.014 to .019 Inclusive
2.000 to 12.000, Incl	.010	.008	.006	.004
Note 1. Thickness is measured at any point across the width not less than .375 inch from a side edge. Note 2. The specified thickness range captions noted above also apply when sheet is specified to a nominal thickness, and the above tolerances are divided equally, over and under.				

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b .020 inch minimum thickness for high-strength low-alloy.

SEGMENTS FROM ASTM A177^a

STAINLESS STEEL

HIGH STRENGTH HEAT-RESISTING SHEET AND STRIP

TENSILE STRENGTH REQUIREMENTS

Temper	Tensile Strength, Minimum		Yield Strength, Minimum		Elongation in 2 Inch or 50 mm, Minimum, %	
	ksi	MPa	ksi	MPa	Up to 0.015 Inch (0.38 mm) Thickness	Over 0.015 Inch (0.38 mm) Thickness
1/4 Hard	125	605	75	365	25	25
1/2 Hard	150	725	110	530	15	18
3/4 Hard	175	850	135	655	10	12
Full Hard	185	895	140	675	8	9

SEGMENTS FROM ASTM A480^a

STAINLESS STEEL

SHEET & PLATE

TOLERANCES

Permissible Variations in Thickness for Hot-rolled Sheets in Cut Lengths, Cold-rolled Sheets in Cut Lengths and Coils	
Specified Thickness ^b , Inch	Permissible Variations, Over and Under ^c
Up to .005	.001
Over .005 to .007 Incl.	.0015
Over .007 to .016 Incl.	.002
Over .016 to .026 Incl.	.003
Over .026 to .040 Incl.	.004
Over .040 to .058 Incl.	.005
Over .058 to .072 Incl.	.006
Over .072 to .083 Incl.	.007
Over .083 to .098 Incl.	.008
Over .098 to .114 Incl.	.009
Over .114 to .130 Incl.	.010
Over .130 to .145 Incl.	.012
Over .145 to less than .187	.014

Permissible Variations in Width and Length for Hot-rolled and Cold-rolled Resquared Sheets (Stretcher Leveled Standard of Flatness)		
Note - Polished sheets with Finishes No. 4 and higher are produced to tolerances given in this table.		
Specified Dimensions, Inch	Tolerances, Inch	
	Over	Under
For Thicknesses Under .131		
Widths up to 48, Excl	.0625	0
Widths 48 and Over	.125	0
Lengths Up to 120, Excl	.0625	0
Lengths 120 and Over	.125	0
For Thicknesses .131 and Over, All Widths and Lengths	.250	0

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Thickness measurements are taken at least .375 inch from the edge of the sheet.

^c Cold-rolled sheets in cut lengths and coils are produced in some type numbers and some widths and thicknesses to tolerances less than those shown in the table.

SEGMENTS FROM ASTM A480 (cont) **STAINLESS STEEL (cont)** **SHEET & PLATE (cont)**

PERMISSIBLE VARIATIONS IN THICKNESS FOR COLD-ROLLED STRIP **IN COILS AND CUT LENGTHS**

Specified Thickness, Inch (mm)	Thickness Tolerances, for the Thickness and Widths Given Over and Under, Inch (mm)		
	Width, Inch (mm)		
	.1875 (4.76) 6.000 (152), Incl	Over 6.000 (152) to 12 (305) Incl	Over 12 (305) to 24 (605) Excl
	Thickness Tolerances ^a		
.005 (0.13 to .010 (.25), incl Over .010 (.25) to .011 (.28), incl Over .002 (.05)	10% .0005 (.04) .011 (.28) to .013 (.33), incl	10% .0015 (.04) .0015 (.04)	10% .0015 (.04) .0015 (.04)
Over .013 (.33) to .017 (.43), incl Over .017 (.43) to .020 (.51), incl Over .020 (.51) to .029 (.74), incl Over .029 (.74) to .035 (.89), incl Over .035 (.89) to .050 (1.27), incl Over .050 (1.27) to .069 (1.75), incl Over .069 (1.75) to .100 (2.54), incl Over .100 (2.54) to .125 (2.98), incl Over .125 (2.98) to .161 (4.09), incl Over .161 (4.09) to under .1875 (4.76)	.0015 (.04) .0015 (.04) .002 (.05) .002 (.05) .002 (.05) .002 (.05) .003 (.08) .003 (.08) .003 (.08) .004 (.10) .004 (.10) .0045 (.11) .0045 (.11) .005 (.13)	.002 (.05) .002 (.05) .0025 (.06) .0025 (.06) .003 (.08) .0035 (.09) .0035 (.09) .0035 (.09) .004 (.10) .0045 (.11) .0045 (.11) .005 (.13)	.002 (.05) .0025 (.06) .0025 (.060) .003 (.08) .0035 (.09) .0035 (.09) .005 (.13) .005 (.13) .005 (.13) .006 (.15)

PERMISSIBLE VARIATIONS IN WIDTH FOR COLD-ROLLED STRIP **IN COILS AND CUT LENGTHS FOR EDGE NOS. 1 AND 5**

Specified Edge Number	Width, Inch (mm)	Thickness, Inch (mm)	Width Tolerance for Thickness And Width Given, Inch (mm)	
			Over	Under
1.000 and 5.000	.2813 (7.14) and under	.0625 (1.59) and Under	.005 (.13)	.005 (.13)
1.000 and 5.000	Over .2813 (2.38) and under	.005 (.13)	.005 (.13)	
1.000 and 5.000	Over .750 (19.05) to 5 (127), incl	.125 (3.18) and under	.005 (.13)	.005 (.13)
5.000	Over 5.000 (127) to 9 (228.60), incl	.125 (3.18) to .008 (.20), incl	.010 (.25)	.010 (.25)
5.000	Over 9.000 (228.60) to 20.000 (508.00), incl	.105 (2.67) to .015 (.38)	.010 (.25)	.010 (.25)
5.000	Over 20.000 (508.00)	.080 (2.03) to .023 (.58)	.015 (.38)	.015 (.38)

PERMISSIBLE VARIATIONS IN WIDTH FOR COLD-ROLLED STRIP **IN COILS AND CUT LENGTHS FOR EDGE NO. 3**

Specified Thickness, Inch (mm)	Width Tolerance, Over and Under For Thickness and Width Given, Inch (mm)					
	Under .500 (12.70) to .1875 (4.76), Incl	.500 (12.70) to 6 (152.40), Incl	Over 6.000 (152.40) to 9 (228.60), Incl	Over 9.000 (228.60) to 12 (304.80), Incl	Over 12.000 (304.80) to 20 (508.00), Incl	Over 20.000 (508.00) to 24 (609.60), Incl
Under .1875 (4.76) to 0.161 (4.09), Incl		.016 (.41)	.020 (.51)	.020 (.51)	.031 (.79)	.031 (.79)
.160 (4.76) to .100 (2.54), Incl	.010 (0.25)	.010 (0.25)	.016 (0.41)	.016 (0.41)	.020 (0.51)	.020 (0.51)
.099 (2.51) to .069 (1.75), Incl	.008 (.20)	.008 (.20)	.010 (.25)	.010 (.25)	.016 (.41)	.020 (.51)
.068 (.173) and Under	.005 (.13)	.005 (.13)	.005 (.13)	.010 (.25)	.016 (.41)	.020 (.51)

^a Thickness tolerances given in inches (mm) unless otherwise indicated.

SEGMENTS FROM ASTM A555^a

STAINLESS STEEL

WIRE

TOLERANCES

Diameter and Out-of-round Tolerances for Round Wire (Drawn, Polished, Centerless Ground, Centerless Ground & Polished) ^{b,c}		
Specified Diameter, Inch	Diameter Tolerance, Inch	
	Over	Under
Under .0048 to .003 Incl	.0001	.0001
Under .008 to .0048 Incl	.0002	.0002
Under .012 to .008 Incl	.0003	.0003
Under .024 to .012 Incl	.0004	.0004
Under .033 to .024 Incl	.0005	.0005
Under .044 to .033 Incl	.0008	.0008
Under .3125 to .044 Incl	.001	.001
Under .500 to .3125 Incl	.0015	.0015
.500	.002	.002

Size Tolerances for Drawn Wire in Hexagon, Octagons, and Squares ^d		
Specified Size (Distance Across Flats) Inch	Size Tolerance, Inch	
	Over	Under
Under .312 to .125	0	.002
Under .500 to .312	0	.003
.500	0	.004

^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b The maximum out-of-round tolerance for round wire is one half of the total size tolerance given in this table.

^c When it is necessary to heat treat or heat treat and pickle after cold finishing, size tolerances are double those shown above for sizes .024 inch and over.

^d When it is necessary to heat treat or heat treat and pickle after cold finishing, size tolerances are double those shown above.

MISCELLANEOUS ASTM^a STAINLESS STEEL

MECHANICAL PROPERTIES & MISCELLANEOUS

Type	Tensile Strength psi	Yield Strength psi	Elongation in 4 x Diameter (Percent)	Hardness Rockwell B Max
ASTM A167 - SHEET & PLATE				
S30100	75,000 Min	30,000 Min	40 Min	92
S30200	75,000 Min	30,000 Min	40 Min	92
S30400	75,000 Min	30,000 Min	40 Min	92
S30500	70,000 Min	25,000 Min	40 Min	88
S31600	75,000	30,000	40	95
ASTM A176 - SHEET & PLATE				
S43000	65,000 Min	30,000 Min	22 Min	
ASTM A313, TYPE 302 - SPRING WIRE				
.010 Diameter	320,000 - 350,000			
.020	300,000 - 330,000			
.035	280,000 - 308,000			
ASTM A580 - WIRE				
S30200, S30400 S31600 Condition A Annealed	Cold Finished, 90,000 Min 75,000	45,000 Min 30,000	30 Min ^b 35	
S43000 Condition A	Cold Finished, 70,000 Min	40,000 Min	16 Min	
ASTM A581 - FREE MACHINING WIRE				
S30300, S41600 Condition A	85,000 - 125,000	35,000 ^c	50 ^c	
ASTM A582 - FREE MACHINING BAR				
S30300, S41600 Condition A	75,000 Min ^c	30,000 Min ^c	35 Min ^c	HBN 262 Max
17-7 PH				
Condition A	130,000	40,000	35	RB 85
Condition C	220,000	190,000	5	RC 43

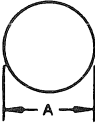
No. 1 Finish	-	Hot Rolled, Annealed and Pickled
No. 2 Finish	-	Very Bright Finish
No. 2B Finish	-	Cold Rolled, Bright Finish
No. 2D Finish	-	Cold Rolled, Dull Finish
No. 4 Finish	-	Standard Polish, One or Both Sides
No. 1 Edge	-	Rolled Edge, Either Round or Square as Specified
No. 3 Edge	-	An Edge Produced by Slitting
No. 5 Edge	-	Approximately Square Edge Produced by Rolling or Filing after Slitting


^a The full text of this ASTM is available for review at 38-314 (Metallurgical Lab). For more information, call 627-7259.

^b Material .156 diameter and under in size, the elongation and reduction in area shall be 25% and 40% respectively.

^c Values given are for comparison and not specified in ASTM.

ALUMINUM WEIGHT

 2011-T3 Round Aluminum Rod Standard Screw Machine Stock Specific 12 Foot Lengths					
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.0938	.0084	.101	1.1875	1.35	16.2
.125	.015	.180	1.250	1.50	18.0
.1406	.019	.228	1.2813	1.58	19.0
.1563	.023	.276	1.3125	1.65	19.8
.1719	.028	.336	1.375	1.81	21.7
.1875	.034	.408	1.4375	1.98	23.8
.2031	.040	.480	1.500	2.16	25.9
.2188	.046	.552	1.5625	2.34	28.1
.2344	.053	.636	1.625	2.53	30.4
.250	.060	.720	1.6875	2.73	32.8
.2656	.068	.816	1.750	2.94	35.3
.2813	.076	.912	1.8125	3.15	37.8
.2969	.085	1.02	1.875	3.37	40.4
.3125	.094	1.13	1.9375	3.60	43.2
.3438	.113	1.36	2.000	3.84	46.1
.375	.135	1.62	2.0625	4.08	49.0
.3906	.147	1.76	2.125	4.33	52.0
.4062	.158	1.90	2.1875	4.59	55.1
.4375	.184	2.21	2.250	4.86	58.3
.4688	.211	2.53	2.3125	5.13	61.6
.500	.240	2.88	2.375	5.41	64.9
.5326	.271	3.25	2.4375	5.70	68.4
.5469	.287	3.44	2.500	6.00	72.0
.5625	.304	3.65	2.5625	6.30	75.6
.5938	.338	4.06	2.625	6.61	79.3
.625	.375	4.50	2.750	7.26	87.1
.6563	.413	4.96	2.875	7.93	95.2
.6719	.434	5.21	3.000	8.64	104.
.6875	.454	5.45	3.125	9.37	112.
.7188	.496	5.95	3.250	10.13	122.
.750	.540	6.48	3.500 ^a	11.75	141.
.7813	.586	7.03	3.750 ^a	13.49	162.
.8125	.634	7.61			
.875	.735	8.82			
.9375	.843	10.1			
1.000	.960	11.5			
1.0313	1.02	12.2			
1.0625	1.08	13.0			
1.125	1.21	14.5			
1.1563	1.28	15.4			

 2024-T351 Round Aluminum Rod Standard Screw Machine Stock Specific 12 Foot Lengths					
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.125	.0148	.178	1.875	3.31	39.7
.1875	.0330	.396	1.9375	3.53	42.4
.2344	.0515	.621	2.000	3.76	45.1
.250	.0588	.706	2.0625	4.00	48.0
.3125	.0918	1.10	2.125	4.25	51.0
.375	.132	1.58	2.1875	4.50	54.0
.4062	.155	1.86	2.125	4.76	57.1
.4375	.180	2.16	2.375	5.30	63.6
.500	.235	2.82	2.500	5.88	70.6
.5625	.298	3.58	2.625	6.48	77.8
.625	.367	4.40	2.750	7.11	85.3
.6875	.444	5.35	2.875	7.77	93.2
.750	.529	6.35	3.000	8.46	102.
.8125	.621	7.45	3.125	9.18	110.
.875	.720	8.64	3.250	9.93	119.
.9375	.827	9.92	3.375	10.7	128.
1.000	.940	11.3	3.500	11.5	138.
1.0625	1.06	12.7	3.750	13.2	158.
1.125	1.19	14.3	4.000	15.0	180.
1.1875	1.33	16.0	4.250	17.0	204.
1.250	1.47	17.6	4.500	19.0	228.
1.3125	1.62	19.4	4.750	21.2	254.
1.375	1.78	21.4	5.000	23.5	282.
1.4375	1.94	23.3	5.250	25.9	311.
1.500	2.12	25.4	5.500	28.5	342.
1.5625	2.30	27.6	5.750	31.1	373.
1.625	2.48	29.8	6.000	33.9	407.
1.6875	2.68	32.2	6.500	39.8	478.
1.750	2.88	34.6	7.000	46.2	554.
1.8125	3.09	37.1	8.000	60.3	724.

^a T4 condition only - Rolled Rod. 2.375" thru 3.250" Cold Finished Rod.

^b .125" thru .3125" - Drawn Rod.
 .375" thru 3.375" - Cold Finished Rod.
 3.500" and over - Rolled Rod.

ALUMINUM (cont)

WEIGHT (cont)



2024-T351 Hexagon Aluminum Bar
Standard Screw Machine Stock
Cold Finished
Specific 12 Foot Lengths

Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.1875	.0365	.438
.250	.0643	.772
.3125	.101	1.21
.375	.146	1.75
.4375	.199	2.39
.500	.260	3.12
.5625	.328	3.94
.625	.405	4.86
.6875	.490	5.88
.750	.583	7.00
.8125	.685	8.22
.875	.794	9.53
.9375	.910	10.9
1.000	1.04	12.5
1.125	1.31	15.7

Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
1.250	1.62	19.4
1.375	1.96	23.5
1.4375	2.14	25.7
1.500	2.33	28.0
1.625	2.74	32.9
1.6875	2.95	35.4
1.750	3.18	38.2
1.8125	3.41	40.9
1.875	3.64	43.7
2.000	4.15	49.8
2.125	4.68	56.2
2.250	5.25	63.0
2.500	6.48	77.8
2.750	7.84	94.1
3.000	9.33	112.0



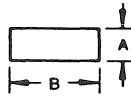
2024-T351 Square Aluminum Bar
Cold Finished - Rolled
Standard 12 Foot Lengths

Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.1875	.0421	.505
.250	.0748	.898
.375	.169	2.03
.4375	.229	2.75
.500	.300	3.60
.5625	.379	4.55
.625	.469	5.63
.750	.675	8.10
.875	.919	11.0
1.000	1.20	14.4
1.125	1.52	18.2
1.250	1.88	22.6
1.375	2.27	27.2

Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
1.500	2.70	32.4
1.625	3.17	38.0
1.750	3.67	44.0
2.000	4.80	57.6
2.250	6.08	73.0
2.500	7.50	90.0
2.625	8.27	99.2
2.750	9.08	109.
3.000	10.8	130.
3.250	12.7	152.
3.500	14.7	176.
4.000	19.2	230.

ALUMINUM (cont)

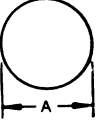
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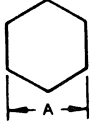


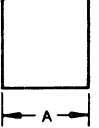
2024-T351 Rectangular Aluminum Bar
Cold-Finished, Rolled,
or Extruded
Random 12 Foot Lengths

Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Length
.125	x .500	.0750	.900	.750	x 1.000	.900	10.8
	.625	.0937	1.12		1.250 Extruded	1.13	13.6
	.750	.113	1.36		1.500	1.35	16.2
	1.000	.150	1.80		1.750	1.58	19.0
	1.250	.188	.226		2.000	1.80	21.6
	1.500	.225	.270		2.500	2.25	27.0
	1.750	.263	.316		3.000	2.70	32.4
	2.000	.300	3.60		3.500 Rolled	3.15	37.8
.1875	x .500	.113	1.36		4.000 Extruded	3.60	43.2
	.625	.141	1.69		6.000 Rolled	5.40	64.8
	.750	.169	2.03	1.000	x 1.250	1.50	18.0
	1.000	.225	2.70		1.500	1.80	21.6
	1.250	.281	3.37		1.750	2.10	25.2
	1.500	.338	4.06		2.000	2.40	28.8
	2.000	.450	5.40		2.500	3.00	36.0
					3.000	3.60	43.2
					3.500 Rolled	4.20	50.4
.250	x .500	.150	1.80		4.000 Rolled	4.80	57.6
	.625	.188	2.26		6.000 Rolled	7.20	86.4
	.750	.225	2.70	1.125	x 1.750	2.36	28.3
	.875	.263	3.16				
	1.000	.300	3.60		1.250	2.25	27.0
	1.250	.375	4.50		2.000	3.00	36.0
	1.500	.450	5.40		2.500	3.75	45.0
	2.000	.600	7.20		3.000 Rolled	4.50	54.0
	2.500	.750	9.00		6.000 Rolled	9.00	108.0
	3.000	.900	10.8	1.500	x 2.000	3.60	43.2
	4.000 Rolled	1.20	14.4		2.500 Rolled	4.50	54.0
.3125	x .500	.188	2.26		3.000 Rolled	5.40	64.8
	.625	.234	2.81		4.000 Rolled	7.20	86.4
	.750	.281	3.37		6.000 Rolled	10.8	130.0
	1.000	.375	4.50		8.000 Rolled	14.4	173.0
	1.250	.469	5.63	1.750	x 2.000 Extruded	4.20	50.4
	1.500	.563	6.76		3.000 Extruded	6.30	75.6
	2.000	.750	9.00		4.000 Extruded	8.40	101.0
					2.250	5.40	64.8
.375	x .500	.225	2.70		2.500 Rolled	6.00	72.0
	.625	.281	3.37		3.000 Rolled	7.20	86.4
	.750	.338	4.06		4.000 Rolled	9.60	115.0
	1.000	.450	5.40		6.000 Rolled	14.4	173.0
	1.250	.563	6.76	2.250	x 4.000 Rolled	10.8	130.0
	1.500	.675	8.10				
	1.750	.788	9.43		2.500	9.00	108.0
	2.000	.900	10.8		4.000 Rolled	12.0	144.0
	2.500	1.13	13.6		4.500 Rolled	13.5	162.0
	3.000	1.35	16.2		5.000 Rolled	15.0	180.0
	4.000 Rolled	1.80	21.6		6.000 Rolled	18.0	216.0
	6.000 Rolled	2.70	32.4	2.750	x 4.000 Rolled	13.2	158.0
	10.000 Rolled	4.50	54.0				
.500	x .625	.375	4.50		3.000	14.4	173.0
	.750	.450	5.40		5.000 Extruded	18.0	216.0
	.875	.525	6.30		6.000 Rolled	21.6	259.0
	1.000	.600	7.20	3.000	x 4.000 Rolled	14.4	173.0
	1.250	.750	9.00		5.000 Extruded	18.0	216.0
	1.500	.900	10.8		6.000 Rolled	21.6	259.0
	1.750	1.05	12.6				
	2.000	1.20	14.4				
	2.500	1.50	18.0				
	3.000	1.80	21.6				
	4.000 Rolled	2.40	28.8				
	6.000 Rolled	3.60	43.2				
	8.000 Rolled	4.80	57.6				
.625	x .750	.563	6.76				
	.875	.657	7.58				
	1.000	.750	9.00				
	1.250	.938	11.3				
	1.500	1.13	13.6				
	2.000	1.50	18.0				

ALUMINUM (cont) **WEIGHT (cont)**

<div>  <div> 6061-T651 Round Aluminum Rod Cold Finished - Rolled Specific 12 Foot Lengths </div> </div>					
Dimension ^a A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension ^a A Inch	Pounds Per Foot	Pounds 12 Foot Length
.125	.0145	.174	1.625	2.43	29.2
.1875	.0324	.389	1.750	2.82	33.8
.250	.0576	.680	1.8125	3.03	36.4
.3125	.0900	1.08	1.875	3.24	38.9
.375	.130	1.56	2.000	3.68	44.2
.4375	.176	2.11	2.125	4.16	49.9
.4688	.202	2.42	2.250	4.66	55.9
.500	.230	2.76	2.375	5.20	62.4
.5625	.291	3.49	2.500	5.76	69.1
.625	.360	4.32	2.625	6.35	76.2
.6875	.435	5.22	2.750	6.97	83.6
.750	.518	6.22	2.875	7.61	91.3
.8125	.608	7.30	3.000	8.29	99.5
.875	.705	8.46	3.250	9.72	117.
.9375	.810	9.72	3.500	11.3	136.
1.000	.921	11.1	3.750	13.0	156.
1.125	1.17	14.0	4.000	14.7	176.
1.1875	1.30	15.6	4.500	18.7	224
1.250	1.44	17.3	5.000	23.1	277.
1.3125	1.59	19.1	5.500	28.0	336.
1.375	1.74	20.9	6.000	33.2	398.
1.4375	1.90	22.8	6.500	38.9	467.
1.500	2.07	24.8	7.000	45.2	542.
1.5625	2.25	27.0	8.000	59.0	708.

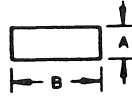
<div>  <div> 6061-T651 Hexagon Aluminum Bar Cold Finished Specific 12 Foot Lengths </div> </div>					
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.250	.0629	.755	1.3125	1.75	21.0
.375	.143	1.72	1.375	1.92	23.1
.4375	.194	2.33	1.4375	2.10	25.2
.50	.254	3.05	1.500	2.28	27.4
.5625	.321	3.85	1.5625	2.48	29.8
.625	.397	4.76	1.625	2.69	32.2
.6875	.480	5.76	1.6875	2.99	34.7
.750	.571	6.85	1.750	3.11	37.3
.8125	.671	8.05	1.875	3.57	42.8
.875	.778	9.34	1.9375	3.81	45.9
.9375	.892	10.7	2.000	4.06	48.7
1.000	1.01	12.1	2.125	4.59	55.1
1.0625	1.15	13.8	2.250	5.14	61.7
1.125	1.28	15.4	2.375	5.45	65.4
1.1875	1.43	17.2	2.500	6.35	76.2
1.250	1.58	19.0	2.625	7.00	84.0
1.2813	1.67	20.0			

<div>  <div> 6061-T6511 Square Aluminum Bar Extruded Standard 12 Foot Lengths </div> </div>					
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension ^a A Inch	Pounds Per Foot	Pounds 12 Foot Length
.500	.293	3.52	1.250	1.83	22.0
.625	.458	5.50	1.500	2.38	28.6
.750	.660	7.92	2.000	4.69	56.3
1.000	1.17	14.0	3.250	12.4	149.

^a Under 3.500 Inch diameter - Cold Finished Rod. 3.500 Inch and over - Rolled Rod.

ALUMINUM (cont)

WEIGHT (cont)

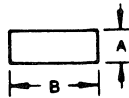


6061-T6511 Rectangular
Extruded Aluminum Bar
Standard 12 Foot Lengths

Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Length
.125	1.000	.147	1.76	.625	1.000	.735	8.82
	1.250	.184	2.21		1.250	.781	9.37
	1.500	.221	2.64		1.500	1.10	13.2
	1.750	.257	3.08		2.000	1.47	17.6
	2.000	.294	3.53	.750	1.000	.882	10.6
	2.500	.368	4.42		1.250	1.10	13.2
.1875	3.000	.441	5.29		1.500	1.32	15.8
	.750	.165	1.98		2.000	1.76	21.1
	1.000	.221	2.65		2.500	2.21	26.5
	1.250	.276	3.31		3.000	2.65	31.8
	1.500	.331	3.97		3.500	3.09	37.1
	2.000	.441	5.29		4.000	3.53	42.4
.250	2.500	.551	6.61		5.000	4.04	48.5
	3.000	.662	7.94		6.000	5.29	63.5
	.750	.221	2.65	1.000	1.250	1.47	17.6
	1.000	.294	3.53		1.500	1.76	21.1
	1.250	.368	4.42		2.000	2.35	28.2
	1.500	.441	5.29		2.500	2.94	35.3
	2.000	.588	7.06		3.000	3.53	42.4
	3.000	.882	10.6		3.500	4.12	49.4
.3125	4.000	1.18	14.2		4.000	4.70	56.4
	.750	.276	3.31		5.000	5.88	70.6
	1.000	.368	4.42		6.000	7.06	84.7
	1.250	.459	5.51	1.250	1.500	2.21	26.5
	1.500	.551	6.61		2.000	2.94	35.3
	2.000	.735	8.82		3.000	4.41	52.9
.375	3.000	1.10	13.2		4.000	5.88	70.6
	.500	.221	2.65	1.500	2.000	3.53	42.4
	.750	.331	3.97		2.500	4.41	52.9
	1.000	.441	5.29		3.000	5.29	63.5
	1.250	.551	6.61		3.500	6.17	74.0
	1.500	.661	7.93		4.000	7.06	84.7
	1.750	.772	9.26	2.000	6.000	10.6	127.
	2.000	.882	10.6		3.000	7.06	84.7
	2.500	1.10	13.2		4.000	9.41	113.
	3.000	1.32	15.8		5.000	11.8	142.
	4.000	1.76	21.1		6.000	14.1	169.
	6.000	2.65	31.8	2.500	4.000	11.8	142.
.500	.750	.441	5.29		4.500	13.2	158.
	1.000	.588	7.07		5.000	14.7	176.
	1.250	.735	8.82		6.000	17.6	211.
	1.500	.882	10.6	3.000	4.000	14.1	169.
	1.750	1.03	12.2		5.000	17.6	211.
	2.000	1.18	14.2		6.000	21.2	254.
	2.500	1.47	17.6				
	3.000	1.76	21.1				
	4.000	2.35	28.2				
	5.000	2.94	35.3				
	6.000	3.53	42.4				

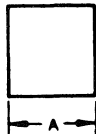
ALUMINUM (cont)

WEIGHT (cont)



6063-T5 Rectangular Aluminum Bar
Extruded - Sharp Corners
16 Foot Lengths

Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 16 Foot Length	Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 16 Foot Length
.125	.500	.0735	1.18	.375	.500	.221	3.54
	.625	.0918	1.47		.625	.276	4.42
	.750	.110	1.76		.750	.331	5.30
	1.000	.147	2.35		1.000	.441	7.06
	1.250	.184	2.94		1.250	.551	8.82
	1.500	.221	3.54		1.500	.661	10.6
	1.750	.257	4.11		1.750	.772	12.4
	2.000	.294	4.70		2.000	.882	14.1
	2.500	.368	5.89		3.000	1.32	21.1
	2.750	.404	6.46		4.000	1.76	28.2
.1875	.500	.111	1.78	.500	.750	.441	7.06
	.750	.165	2.64		1.000	.588	9.41
	1.000	.221	3.54		1.250	.735	11.8
	1.250	.276	4.42		1.500	.883	14.1
	1.500	.331	5.30		2.000	1.18	18.9
	2.000	.441	7.06		2.500	1.47	23.5
	2.500	.551	8.82		3.000	1.76	28.2
	3.000	.662	10.6		4.000	2.35	37.6
	3.500	.774	12.4	.625	.750	.551	8.82
					1.000	.735	11.8
.250	.500	.147	2.35		1.500	1.10	17.6
	.625	.184	2.94		2.000	1.47	23.5
	.750	.221	3.54	.750	1.000	.882	14.1
	1.000	.294	4.70		1.500	1.32	21.1
	1.250	.368	5.89		2.000	1.76	28.2
	1.500	.441	7.07		3.000	2.65	42.4
	1.750	.515	8.24		4.000	3.53	56.5
	2.000	.588	9.41	1.000	1.500	1.76	28.2
	2.250	.662	10.6		2.000	2.35	37.6
	2.500	.736	11.8		3.000	3.53	56.5
	3.000	.882	14.1		4.000	4.70	75.2
	4.000	1.18	18.9				

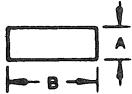


6063-T5 Square Aluminum Bar
Extruded - Sharp Corners
16 Foot Lengths

Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.250	.0732	1.17
.375	.165	2.64
.500	.294	4.70
.625	.459	7.34
.750	.662	10.6
1.000	1.18	18.9
1.250	1.84	29.4
1.500	2.65	42.4
2.000	4.70	75.2

ALUMINUM (cont)

WEIGHT (cont)

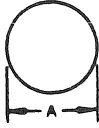


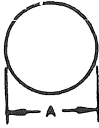
7075-T6510 Rectangular Aluminum Bar

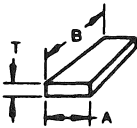
Cold Finished

Random 12 Foot Lengths

Dimension A Inch	Dimension B Inch		Pounds Per Foot	Pounds 12 Foot Length
.250	1.000		.303	3.64
	1.500		.455	5.46
	3.000		.909	10.9
.375	1.000		.455	5.46
.500	1.500		.909	10.9
	4.000		2.42	29.0
.625	1.000		.758	9.10
.750	3.000		2.73	32.8
1.000	1.750		2.12	25.4
	2.000		2.42	29.0
	3.000	Rolled	3.64	43.7
	4.000	Rolled	4.85	58.2
1.250	3.000	Rolled	4.55	54.6
1.500	2.500	Rolled	4.55	54.6
	4.000	Rolled	7.27	87.2
2.000	2.500	Rolled	6.05	72.7
	3.000	Rolled	7.27	87.2
	4.000	Rolled	9.70	116.
	6.000	Rolled	14.0	174.
2.500	4.000	Rolled	12.1	145.
	6.000	Rolled	18.1	217.
3.000	4.000	Rolled	14.5	174.
	4.500	Rolled	16.0	192.
	6.000	Rolled	22.0	264.

 6262-T9 Round Aluminum Rod Cold Finished Standard Screw Machine Stock Specific 12 Foot Lengths		
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.125	.0145	.174
.1875	.0324	.389
.250	.0576	.691
.3125	.090	1.08
.375	.130	1.56
.4375	.176	2.11
	.202	2.42
	.320	2.76
	.291	3.49
	.360	4.32
.750	.518	6.22
.8125	.608	7.30
.875	.705	8.46
1.000	.921	11.1
1.125	1.17	14.0
1.250	1.44	17.3
1.3125	1.59	19.1
1.375	1.74	20.9
1.500	2.07	24.8
1.625	2.43	29.2
1.750	2.82	33.8
1.875	3.24	38.9
2.000	3.68	44.2
2.125	4.16	49.9
2.250	4.66	55.9
2.500	5.76	69.1
2.750	6.97	83.6
3.000	8.29	99.5
3.125	9.73	117.0

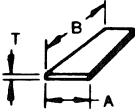
 7075-T6510 Round Aluminum Rod Cold Finished - Rolled Standard 12 Foot Lengths		
Dimension ^a A Inch	Pounds Per Foot	Pounds 12 Foot Length
.375	.134	1.61
.500	.237	2.84
.625	.379	4.45
.750	.534	6.41
.8125	.627	7.52
.875	.727	8.72
1.000	.950	11.4
1.125	1.20	14.4
1.250	1.48	17.8
1.375	1.80	21.6
1.500	2.14	25.7
1.625	2.51	30.1
1.750	2.91	34.9
2.000	3.80	45.6
2.250	4.81	57.7
2.500	5.94	71.3
2.625	6.54	78.5
2.750	7.18	86.2
3.000	8.55	103.
3.500	11.6	139.
4.000	15.2	182.
4.250	17.2	206.
4.500	19.2	230.
5.000	23.7	284.
5.500	28.8	346.
6.000	34.2	410.

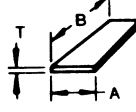
 3003-H14 Aluminum Plate Mill Finish-Sheared Edges				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Plate
.250	48.000	144.000	3.56	171.
.375	36.000	96.000	5.35	128.
.375	48.000	144.000	5.35	256.
.50	36.000	96.000	7.13	171.

^a 3-1/2 Inch and Under - Cold Finished Rod. Over 3-1/2 Inch Diameter - Rolled Rod.

ALUMINUM (cont)

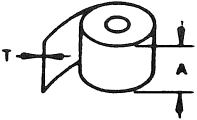
WEIGHT (cont)

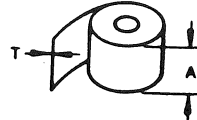
 3003-H14 Aluminum Flat Sheet Mill Finish				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Sheet
.012	24.000	72.000	.171	2.05
.016	24.000	72.000	.228	2.74
.016	36.000	96.000	.228	5.48
.020	24.000	72.000	.285	3.42
.020	36.000	96.000	.285	6.84
.020	36.000	120.000	.285	8.55
.025	36.000	96.000	.356	8.54
.025	36.000	120.000	.356	10.7
.025	36.000	144.000	.356	12.8
.025	48.000	96.000	.356	11.4
.025	48.000	120.000	.356	14.2
.025	48.000	144.000	.356	17.1
.032	24.000	72.000	.456	5.47
.032	36.000	96.000	.456	10.9
.032	36.000	120.000	.456	13.7
.032	36.000	144.000	.456	16.4
.032	48.000	96.000	.456	14.6
.032	48.000	120.000	.456	18.2
.032	48.000	144.000	.456	21.9
.040	36.000	96.000	.570	13.7
.040	36.000	120.000	.570	17.1
.040	36.000	144.000	.570	20.5
.040	48	96	.570	18.2
.040	48.000	120.000	.570	22.8
.040	48.000	144.000	.570	27.4
.050	36.000	96.000	.713	17.1
.050	36.000	120.000	.713	21.4
.050	36.000	144.000	.713	25.7
.050	48.000	96.000	.713	22.8
.050	48.000	120.000	.713	28.5
.050	48.000	144.000	.713	34.2
.050	60.000	144.000	.713	42.8
.063	36.000	96.000	.898	21.6
.063	36.000	120.000	.898	26.9
.063	36.000	144.000	.898	32.3
.063	48.000	96.000	.898	28.7
.063	48.000	120.000	.898	35.9
.063	48.000	144.000	.898	43.1
.063	60.000	144.000	.898	53.9
.080	36.000	96.000	1.14	27.4
.080	48.000	120.000	1.14	45.6
.080	48.000	144.000	1.14	54.7
.090	36.000	96.000	1.28	30.7
.090	48.000	120.000	1.28	51.2
.090	48.000	144.000	1.28	61.4
.100	36.000	96.000	1.43	34.3
.100	48.000	144.000	1.43	68.6
.125	36.000	96.000	1.78	42.7
.125	36.000	120.000	1.78	53.4
.125	48.000	120.000	1.78	71.2
.125	48.000	144.000	1.78	85.4
.125	60.000	144.000	1.78	107.
.160	48.000	144.000	2.28	109.
.190	36.000	96.000	2.71	65.
.190	48.000	120.000	2.71	108.
.190	48.000	144.000	2.71	130.

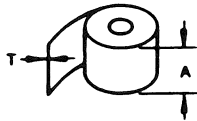
 5005-H34 Aluminum Flat Sheet Mill Finish				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Sheet
.012	24.000	72.000	.169	2.03
.016	24.000	72.000	.226	2.71
.020	24.000	72.000	.282	3.38
.020	36.000	96.000	.282	6.77
.025	36.000	96.000	.353	8.47
.025	48.000	96.000	.353	11.3
.025	48.000	120.000	.353	14.1
.025	48.000	144.000	.353	16.9
.032	24.000	72.000	.452	5.42
.032	36.000	96.000	.452	10.9
.032	36.000	120.000	.452	13.6
.032	48.000	96.000	.452	14.5
.032	48.000	120.000	.452	18.1
.032	48.000	144.000	.452	21.7
.040	36.000	96.000	.564	13.5
.040	36.000	120.000	.564	16.9
.040	36.000	144.000	.564	20.3
.040	48.000	96.000	.564	18.1
.040	48.000	120.000	.564	22.6
.040	48.000	144.000	.564	27.1
.050	36.000	96.000	.706	16.9
.050	36.000	120.000	.706	21.2
.050	48.000	96.000	.706	22.6
.050	48.000	120.000	.706	28.2
.050	48.000	144.000	.706	33.9
.063	36.000	96.000	.889	21.3
.063	36.000	120.000	.889	26.7
.063	48.000	96.000	.889	28.5
.063	48.000	120.000	.889	35.6
.063	48.000	144.000	.889	42.7
.080	48.000	144.000	1.13	54.2
.090	36.000	96.000	1.27	30.5
.090	48.000	144.000	1.27	61.0
.100	48.000	144.000	1.41	67.7
.125	36.000	96.000	1.76	42.2
.125	48.000	96.000	1.76	56.3
.125	48.000	120.000	1.76	70.4
.125	48.000	144.000	1.76	84.5
.160	48.000	144.000	2.26	108.
.190	48.000	144.000	2.68	129.
.250	48.000	144.000	3.53	169.

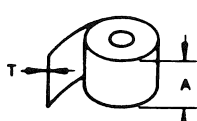
ALUMINUM (cont)

WEIGHT (cont)

 3003-H14 Aluminum in Coils Mill Finish		
Dimension T Inch	Dimension A Inch	Pounds Linear Foot
.010	12.000	.143
.016	18.000	.342
.016	24.000	.456
.016	36.000	.684
.016	48.000	.912
.018	36.000	.769
.020	36.000	.855
.025	24.000	.712
.025	36.000	1.07
.025	48.000	1.42
.032	24.000	.912
.032	36.000	1.37
.032	48.000	1.82
.040	24.000	1.14
.040	36.000	1.71
.040	48.000	2.28
.050	24.000	1.43
.050	36.000	2.14
.050	48.000	2.85
.063	24.000	1.80
.063	36.000	2.69
.063	48.000	3.59
.080	36.000	3.42
.080	48.000	4.56
.090	36.000	3.84
.090	48.000	5.12
.100	36.000	4.29
.100	48.000	5.72
.125	36.000	5.34

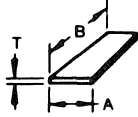
 5005-H34 Aluminum in Coils Mill Finish		
Dimension T Inch	Dimension A Inch	Pounds Linear Foot
.016	36.000	.678
.020	36.000	.846
.025	24.000	.706
.025	36.000	1.06
.032	36.000	1.36
.032	48.000	1.81
.040	36.000	1.69
.040	48.000	2.26
.050	36.000	2.12
.050	48.000	2.82
.063	36.000	2.67
.063	48.000	3.56
.090	36.000	3.81
.125	36.000	5.28

 5052-H32 Aluminum in Coils Mill Finish		
Dimension T Inch	Dimension A Inch	Pounds Linear Foot
.020	36.000	.840
.025	36.000	1.05
.032	36.000	1.34
.032	48.000	1.79
.040	36.000	1.68
.040	48.000	2.24
.050	36.000	2.09
.050	48.000	2.79
.063	36.000	2.64
.063	48.000	3.52
.080	36.000	3.36
.080	48.000	4.48
.090	36.000	3.78

 5052-H34 Aluminum in Coils Mill Finish		
Dimension T Inch	Dimension A Inch	Pounds Linear Foot
.016	36.000	.669
.020	36.000	.840
.025	36.000	1.05
.032	36.000	1.34
.032	48.000	1.79
.040	36.000	1.68
.040	48.000	2.24
.050	36.000	2.09
.050	48.000	2.79
.063	36.000	2.64
.063	48.000	3.52
.090	36.000	3.78

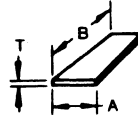
ALUMINUM (cont)

WEIGHT (cont)



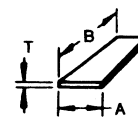
5052-H32 Aluminum Flat Sheet
Mill Finish

Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Sheet
.020	36.000	96.000	.278	6.67
.025	36.000	96.000	.349	8.38
.025	48.000	144.000	.349	16.7
.032	36.000	96.000	.447	10.7
.032	36.000	120.000	.447	13.4
.032	48.000	96.000	.447	14.3
.032	48.000	120.000	.447	17.9
.032	48.000	144.000	.447	21.5
.040	36.000	96.000	.559	13.4
.040	36.000	120.000	.559	16.8
.040	48.000	96.000	.559	17.9
.040	48.000	120.000	.559	22.4
.040	48.000	144.000	.559	26.8
.050	36.000	96.000	.698	16.8
.050	36.000	120.000	.698	20.9
.050	48.000	96.000	.698	22.3
.050	48.000	120.000	.698	27.9
.050	48.000	144.000	.698	33.5
.063	36.000	96.000	.880	21.1
.063	48.000	96.000	.880	28.2
.063	48.000	120.000	.880	35.2
.063	48.000	144.000	.880	42.2
.080	36.000	96.000	1.12	26.9
.080	48.000	96.000	1.12	35.8
.080	48.000	144.000	1.12	53.8
.090	36.000	96.000	1.26	30.2
.090	48.000	96.000	1.26	40.3
.090	48.000	144.000	1.26	60.5
.100	48.000	144.000	1.40	67.2
.125	36.000	96.000	1.75	42.0
.125	48.000	144.000	1.75	84.0
.160	48.000	144.000	2.23	107.
.190	36.000	96.000	2.65	63.6
.190	48.000	144.000	2.65	127.
.250	48.000	144.000	3.49	168.
.312	48.000	144.000	4.37	210.
.375	48.000	144.000	5.24	252.
.500	48.000	144.000	6.98	335.
.750	48.000	144.000	10.5	503.
1.000	48.000	144.000	14.0	670.



5052-H34 Aluminum Flat Sheet
Mill Finish

Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Plate
.020	36.000	96.000	.279	6.67
.025	36.000	96.000	.349	3.38
.032	36.000	96.000	.447	10.7
.032	36.000	120.000	.447	13.4
.032	48.000	96.000	.447	14.3
.032	48.000	120.000	.447	17.9
.032	48.000	144.000	.447	21.5
.040	36.000	96.000	.559	13.4
.040	36.000	120.000	.559	16.8
.040	48.000	96.000	.559	17.9
.040	48.000	120.000	.559	22.4
.040	48.000	144.000	.559	26.8
.050	36.000	96.000	.698	16.8
.050	36.000	20.000	.698	20.9
.050	48.000	96.000	.698	22.3
.050	48.000	120.000	.698	27.9
.050	48.000	144.000	.698	33.5
.063	36.000	96.000	.880	21.1
.063	48.000	96.000	.880	28.1
.063	48.000	120.000	.880	35.2
.063	48.000	144.000	.880	42.2
.080	48.000	144.000	1.12	53.8
.090	36.000	96.000	1.26	30.2
.090	48.000	144.000	1.26	60.5
.100	48.000	144.000	1.40	67.2
.125	48.000	144.000	1.75	84.0
.190	48.000	144.000	2.65	127.
.250	48.000	144.000	3.49	167.

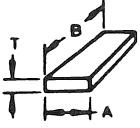


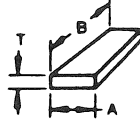
5657-H25 Aluminum Flat Sheet
Mill Finish

Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Plate
.032	48.000	144.000	.452	21.7
.040	48.000	144.000	.564	27.1
.048	48.000	144.000	.664	31.9

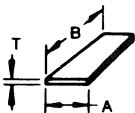
ALUMINUM (cont)

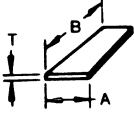
WEIGHT (cont)

 <div> 2024-T351 (Formerly 2024-T4) Bare Aluminum Flat Plate Mill Finish-Oiled and Identified </div>				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Plate
.250	36.000	96.000	3.60	86.4
.250	48.000	144.000	3.60	173.
.313	36.000	96.000	4.51	108.
.313	48.000	144.000	4.51	217.
.375	36.000	96.000	5.40	130.
.375	48.000	144.000	5.40	259.
.375	60.000	144.000	5.40	324.
.500	36.000	96.000	7.20	173.
.500	48.000	144.000	7.20	346.
.625	36.000	96.000	9.00	216.
.625	48.000	144.000	9.00	432.
.750	36.000	96.000	10.8	259.
.750	48.000	144.000	10.8	518.
1.000	48.000	144.000	14.4	346.
1.000	48.000	144.000	14.4	691.
1.250	24.000	72.000	18.0	216.
1.250	36.000	96.000	18.0	432.
1.250	48.000	144.000	18.0	864.
1.500	24.000	72.000	21.6	259.
1.500	36.000	96.000	21.6	518.
1.500	48.000	144.000	21.6	1037.
1.750	24.000	72.000	25.2	302.
1.750	36.000	96.000	25.2	605.
2.000	24.000	72.000	28.8	346.
2.000	36.000	96.000	28.8	691.
2.000	48.000	144.000	28.8	1382.
2.500	36.000	96.000	36.0	864.
2.500	48.000	144.000	36.0	1728.
3.000	36.000	96.000	43.2	1037.
3.000	48.000	144.000	43.2	2074.
3.500	41.000	146.000	50.4	2095.
3.500	48.000	144.000	50.4	2419.
4.000	48.000	144.000	57.6	2765.

 <div> 6061-T651 (Formerly 6061-T6) Aluminum Flat Plate Mill Finish-Oiled and Identified </div>				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Plate
.250	36.000	96.000	3.53	84.7
.250	48.000	84.000	3.53	98.8
.250	48.000	144.000	3.53	169.
.250	50.000	148.250	3.53	177.
.250	60.000	144.000	3.53	212.
.313	48.000	144.000	4.42	212.
.375	48.000	144.000	5.29	254.
.375	48.000	147.000	5.29	265.
.375	60.000	144.000	5.29	317.
.500	36.000	96.000	7.06	169.
.500	48.000	144.000	7.06	339.
.500	60.000	144.000	7.06	423.
.625	36.000	96.000	8.82	212.
.625	48.000	144.000	8.82	423.
.625	60.000	144.000	8.82	529.
.750	36.000	96.000	10.6	254.
.750	48.000	144.000	10.6	508.
.750	60.000	144.000	10.6	635.
.875	36.000	96.000	12.4	296.
.875	48.000	144.000	12.4	593.
1.000	48.000	144.000	14.1	678.
1.000	60.000	144.000	14.1	847.
1.250	36.000	96.000	17.7	424.
1.250	48.000	144.000	17.7	849.
1.250	60.000	144.000	17.7	1059.
1.500	36.000	96.000	21.1	508.
1.500	48.000	144.000	21.1	1017.
1.500	60.000	144.000	21.1	1271.
1.750	36.000	96.000	24.7	593.
1.750	48.000	96.000	24.7	971.
1.750	48.000	144.000	24.7	1186.
2.000	36.000	96.000	28.2	678.
2.000	48.000	144.000	28.2	1356.
2.500	36.000	96.000	35.3	849.
2.500	48.000	144.000	35.3	1130.
2.500	48.000	144.000	35.3	1694.
3.000	36.000	96.000	42.4	1017.
3.000	48.000	96.000	42.4	1356.
3.055	36.000	96.000	43.9	1054.
3.500	48.000	96.000	49.4	1581.
3.500	48.000	144.000	49.4	2372.
4.000	48.000	96.000	56.5	1807.
4.000	48.000	144.000	56.5	2711.
5.000	48.000	96.000	70.6	2259.
5.000	48.000	144.000	70.6	3389.
6.000	48.000	72.000	84.7	2033.
6.000	48.000	144.000	84.7	4066.

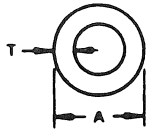
ALUMINUM (cont)
 WEIGHT (cont)

<div>  <div> 6061-T6 Aluminum Flat Sheet Mill Finish-Oiled and Identified </div> </div>				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Sheet
.020	36.000	96.000	.282	6.77
.025	36.000	144.000	.353	12.7
.032	48.000	144.000	.452	21.7
.040	36.000	96.000	.564	13.5
.040	48.000	96.000	.564	18.1
.040	48.000	144.000	.564	27.1
.050	48.000	144.000	.706	33.9
.050	48.000	96.000	.706	22.6
.063	48.000	144.000	.889	42.7
.063	60.000	144.000	.889	53.3
.080	48.000	144.000	1.13	54.2
.090	30.000	96.000	1.27	25.4
.090	36.000	96.000	1.27	30.5
.090	48.000	144.000	1.27	61.0
.100	48.000	144.000	1.41	67.7
.125	48.000	144.000	1.76	84.5
.125	60.000	144.000	1.76	106.
.160	48.000	144.000	2.26	108.
.190	48.000	144.000	2.68	129.

<div>  <div> 7075-T6 Alclad Aluminum Flat Sheet Mill Finish Interleaved and Identified </div> </div>				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Foot	Pounds Per Sheet
.125	36.000	96.000	1.82	43.7
.190	36.000	96.000	2.76	66.2
.190	48.000	144.000	2.76	132.5

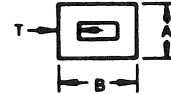
ALUMINUM (cont)

WEIGHT (cont)



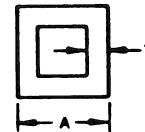
6061-T6 Drawn Aluminum Tube
12 Foot Lengths

Dimension A Inch	Dimension T Inch	Pounds Per Foot	Pounds 12 Foot Length
.1875	.035	.0197	.236
.250	.035	.0278	.334
.250	.044	.0364	.437
.3125	.035	.0359	.431
.3125	.058	.0550	.660
.375	.035	.0440	.528
.375	.049	.0590	.708
.375	.065	.0740	.888
.4375	.035	.0520	.624
.4375	.049	.0700	.840
.4375	.065	.0890	1.07
.500	.035	.0600	.720
.500	.049	.0820	.984
.500	.058	.0950	1.14
.500	.065	.104	1.25
.5625	.035	.0680	.816
.625	.035	.0760	.912
.625	.049	.104	1.25
.625	.058	.121	1.45
.625	.065	.134	1.61
.750	.035	.092	1.10
.750	.049	.127	1.52
.750	.058	.148	1.78
.750	.065	.164	1.97
.750	.083	.205	2.46
.875	.035	.109	1.31
.875	.058	.175	2.10
.875	.065	.194	2.33
1.000	.035	.125	1.50
1.000	.049	.172	2.06
1.000	.058	.202	2.42
1.000	.065	.225	2.70
1.000	.083	.281	3.37
1.125	.035	.141	1.69
1.125	.058	.229	2.75
1.250	.035	.157	1.88
1.250	.049	.217	2.60
1.250	.058	.255	3.06
1.250	.065	.258	3.42
1.250	.083	.358	4.30
1.375	.058	.282	3.38
1.500	.035	.189	2.27
1.500	.065	.345	4.14
1.500	.083	.435	5.22
1.750	.058	.363	4.35
1.750	.083	.510	6.12
2.000	.049	.353	4.24
2.000	.065	.465	5.58
2.000	.083	.590	7.08
2.250	.065	.520	6.24
2.500	.065	.580	6.96
3.000	.065	.700	8.40



6063-T5 Rectangular Aluminum Tubing
Extruded - Sharp Corners
21 Foot 1 Inch Exact Lengths

Dimension A Inch	Dimension B Inch	Dimension T Inch	Pound Square Foot	Pounds Per Sheet
.500	1.000	.125	.374	7.89
.750	1.500	.125	.600	12.6
1.000	1.500	.125	.674	14.2
1.000	2.000	.125	.824	17.4
1.250	2.500	.125	1.050	22.1
1.500	2.000	.125	.974	20.5
1.750	3.000	.125	1.35	28.5
1.750	3.500	.125	1.50	31.6
1.750	4.000	.125	1.65	34.8
1.750	5.000	.125	1.95	41.1
2.000	3.000	.125	1.43	30.1
2.000	5.000	.125	3.03	42.8

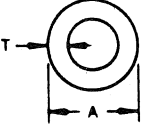


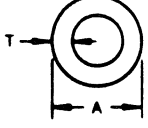
6063-T5 Square Aluminum Tubing
Extruded - Sharp Corners
21 Foot 1 Inch Lengths

Dimension A Inch	Dimension T Inch	Pounds Per Foot	Pounds 21 Foot Length
.750	.125	.374	7.89
1.000	.125	.524	11.0
1.250	.125	.674	14.2
1.500	.125	.824	17.4
1.750	.125	.974	20.5
2.000	.125	1.12	23.6

ALUMINUM (cont)

WEIGHT (cont)

 <p>6061-T6 Extruded Aluminum Tube 12 Foot Exact Lengths</p>			
Dimension A Inch	Dimension T Inch	Pounds Per Foot	Pounds 12 Foot Length
1.500	.125	.630	7.56
1.500	.250	1.15	13.8
2.000	.125	8.70	10.4
2.000	.250	1.62	19.4
2.500	.125	1.10	13.2
2.500	.250	2.08	25.0
3.000	.125	1.33	16.0
3.000	.250	2.54	30.5

 <p>6061-T6 Mechanical Tube Extruded 12 Foot Exact Lengths</p>			
Dimension A Inch	Dimension T Inch	Pounds Per Foot	Pounds 12 Foot Length
3.250	.500	5.08	61.0
3.500	.750	7.62	91.4
4.000	.750	9.01	108.
4.500	.750	10.4	125.
5.000	.750	11.8	142.
5.000	1.000	14.8	178.
5.500	1.000	16.6	199.
6.000	1.000	18.5	222.
7.000	1.000	22.2	266.
8.000	1.000	25.9	311.

ALUMINUM (cont)**WEIGHT (cont)**

SEGMENTS FROM ASTM B 373
ALUMINUM FOIL FOR CAPACITORS^a

AREA PER UNIT WEIGHT REQUIREMENTS

NOTE: SI values in parentheses are for information only.

Nominal Thickness, Inch (mm)	Nominal Covering Area, Inch ² lb (mm ² /g)	Permissible Range of Covering Area ² /lb (mm ² /g)			
		Minimum	Maximum	Minimum	Maximum
0.00017 (0.0043)	60 300 (85 700)	54 300	66 300	(77 200)	(94 300)
0.00020 (0.0051)	51 300 (73 000)	46 200	56 400	(65 700)	(80 200)
0.00023 (0.0058)	44 600 (63 400)	40 100	49 000	(57 000)	(69 700)
0.00025 (0.0064)	41 000 (58 300)	36 900	45 100	(52 500)	(64 100)
0.00030 (0.0076)	34 200 (48 600)	30 800	37 600	(43 800)	(53 500)
0.00035 (0.0089)	29 300 (41 700)	26 400	32 200	(37 500)	(45 800)
0.00040 (0.0102)	25 600 (36 400)	23 000	28 200	(32 700)	(40 100)
0.00045 (0.0114)	22 800 (32 400)	20 500	25 100	(29 200)	(35 700)
0.00050 (0.0127)	20 500 (29 200)	18 400	22 600	(26 200)	(32 100)

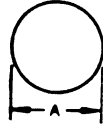
^a This specification is under the jurisdiction of ASTM Committee B-7 on Light Metals and Alloys and is the direct responsibility of Subcommittee B07.03 on Aluminum Alloy Wrought Products.

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BRASS

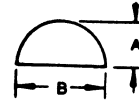
WEIGHT (LBS PER FT)

Round Free-Cutting Brass Rod
Screw Machine Quality
12 Foot Lengths



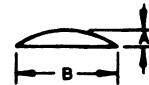
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.0625	.0113	.136	1.250	4.52	54.2
.0781	.0177	.212	1.3125	4.98	59.8
.0938	.0254	.305	1.375	5.47	65.6
.1093	.0346	.415	1.4375	5.98	71.8
.125	.0452	.542	1.500	6.51	78.1
.1406	.0572	.686	1.5625	7.06	84.7
.1563	.0706	.847	1.625	7.64	91.7
.1719	.0855	1.03	1.6875	8.24	98.9
.1875	.102	1.22	1.750	8.86	106.
.2031	.119	1.43	1.8125	9.51	114.
.2188	.138	1.66	1.875	10.2	122.
.2344	.159	1.91	1.9375	10.9	131.
.250	.181	2.17	2.000	11.6	139.
.2656	.204	2.45	2.125	13.1	157.
.2813	.229	2.75	2.1563	13.4	161.
.2969	.255	3.06	2.250	14.6	175.
.3125	.283	3.40	2.375	16.3	196.
.3281	.312	3.74	2.4375	17.2	206.
.3438	.342	4.10	2.500	18.1	217.
.3594	.374	4.49	2.625	19.9	239.
.375	.407	4.88	2.750	21.9	263.
.3906	.441	5.29	2.875	23.9	287.
.4062	.478	5.74	3.000	26.0	312.
.4219	.515	6.18	3.125	28.2	338.
.4375	.554	6.65	3.250	30.6	367.
.4531	.594	7.13	3.500	35.4	425.
.4688	.636	7.63	3.625	38.0	456.
.4844	.679	8.15	3.750	40.7	488.
.500	.723	8.68	4.000	46.3	556.
.5156	.769	9.23	4.250	52.3	628.
.5326	.817	9.80	4.500	58.6	703.
.5625	.915	11.0	4.750	65.3	784.
.5938	1.02	12.2	5.000	72.3	868.
.625	1.13	13.6	5.500	87.5	1050.
.6563	1.25	15.0	6.000	104.	1248.
.6875	1.37	16.4	6.500	122.	1464.
.7188	1.49	17.9	7.000	142.	1704.
.750	1.63	19.6	8.000	185.	2220.
.7813	1.77	21.2	9.000	234.	2808.
.8125	1.91	22.9	10.000	289.	3468.
.8438	2.06	24.7	11.000	350.	4200.
.875	2.22	26.6	12.000	416.	4992.
.9063	2.38	28.6			
.9375	2.54	30.5			
.9688	2.72	32.6			
1.000	2.89	34.7			
1.0625	3.27	39.2			
1.125	3.66	43.9			
1.1875	4.08	49.0			
1.2188	4.29	51.5			

Half-Round Free Cutting Brass Rod
12 Foot Mill Lengths



Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Length
.125	.250	.0905	1.09
.1563	.3125	.142	1.70
.1875	.375	.204	2.45
.250	.500	.362	4.34
.3125	.625	.565	6.78
.375	.750	.815	9.78
.4375	.875	1.11	13.3
.500	1.000	1.45	17.4
.625	1.250	1.26	27.1
1.000	2.000	5.80	69.6


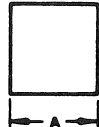
Half-Oval Free Cutting Brass Rod
12 Foot Mill Lengths



Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Length
.0938	.375	.102	1.22
.125	.500	.183	2.20
.1563	.500	.283	3.40
.1875	.750	.408	4.90
.250	.750	.544	6.53
.2188	.875	.555	6.66
.250	1.000	.723	8.68

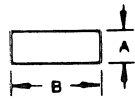
BRASS (cont)

WEIGHT (LBS PER FT) (cont)

Hexagon Free-Cutting Brass Rod Screw Machine Quality 12 Foot Lengths						Square Free-Cutting Brass Bar Screw Machine Quality 12 Foot Lengths					
											
Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Pounds Per Foot	Pounds 12 Foot Length
.0625	.0125	.150	1.250	4.99	59.9	.0938	.0324	.389	1.000	3.68	44.2
.0938	.0280	.336	1.3125	5.50	66.0	.125	.0576	.691	1.125	4.66	55.9
.125	.0499	.599	1.375	6.03	72.4	.1563	.0899	1.08	1.250	5.76	69.1
.1563	.0779	.935	1.4375	6.59	79.1	.1875	.130	1.56	1.375	6.97	83.6
.1875	.112	1.34	1.500	7.18	86.2	.2188	.176	2.11	1.500	8.29	99.5
.2188	.153	1.84	1.5625	7.79	93.5	.250	.230	2.76	1.625	9.73	117.
.250	.199	2.39	1.625	8.43	101.	.3125	.360	4.32	1.750	11.3	136.
.2813	.252	3.02	1.6875	9.09	109.	.375	.518	6.22	2.000	14.7	176.
.3125	.312	3.74	1.750	9.77	117.	.4375	.705	8.46	2.125	16.6	199.
.3438	.377	4.52	1.8125	10.5	126.	.500	.921	11.1	2.250	18.7	224.
.375	.449	5.39	1.875	11.2	134.	.5625	1.17	14.0	2.500	23.0	276.
.4062	.527	6.32	1.9375	12.0	144.	.625	1.44	17.3	2.750	27.9	335.
.4375	.611	7.33	2.000	12.8	154.	.6875	1.74	20.9	3.000	33.2	398.
.4688	.701	8.41	2.125	14.4	173.	.750	2.07	24.8	3.500	45.1	541.
.500	.798	9.58	2.250	16.2	194.	.8125	2.43	29.2	4.000	58.9	707.
.5625	1.01	12.1	2.375	18.0	216.	.875	2.82	33.8	4.250	66.5	798.
.5938	1.13	13.6	2.500	19.9	239.	.9375	3.24	38.9	4.500	74.6	895.
.625	1.25	15.0	2.625	22.0	264.						
.6875	1.51	18.1	2.750	24.1	289.						
.750	1.80	21.6	2.875	26.4	317.						
.8125	2.11	25.3	3.000	28.7	344.						
.875	2.44	29.3	3.125	31.2	374.						
.9375	2.80	33.6	3.250	33.7	404.						
1.000	3.19	38.3	3.500	39.1	469.						
1.0625	3.60	43.2	3.750	44.9	539.						
1.125	4.04	48.5	4.000	51.1	613.						
1.1875	4.50	54.0									

BRASS (cont)

WEIGHT (LBS PER FT) (cont)

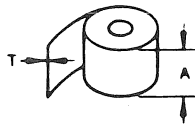


Rectangular Free-cutting Brass Bar
Screw Machine Quality

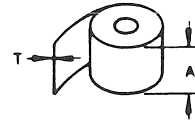
Dim A Inch	Dim B Inch	Pounds Per Foot	Pounds 12 Foot Length	Dim A Inch	Dim B Inch	Pounds Per Foot	Pounds 12 Foot Length	Dim A Inch	Dim B Inch	Pounds Per Foot	Pounds 12 Foot Length	Dim A Inch	Dim B Inch	Pounds Per Foot	Pounds 12 Foot Length
.0625	.250	.057	.684	.250	.3125	.287	3.44	.500	.625	1.15	13.8	1.250	1.500	6.89	82.7
	.375	.086	1.03		.375	.344	4.13		.750	1.38	16.6		1.750	8.06	96.7
	.500	.115	1.38		.500	.459	5.51		.875	1.61	19.3		2.000	9.18	110.
	.625	.144	1.73		.625	.574	6.89		1.000	1.84	22.1		2.250	10.2	122.
	.750	.172	2.06		.750	.688	8.26		1.250	2.30	27.6		2.500	11.5	138.
	.875	.201	2.41		.875	.803	9.64		1.375	2.53	30.4		3.000	13.8	166.
	1.000	.230	2.76		1.000	.918	11.0		1.500	2.76	33.1		3.500	16.1	193.
	1.500	.345	4.14		1.125	1.04	12.5		1.750	3.22	38.6		4.000	18.4	221.
	2.000	.459	5.51		1.250	1.15	13.8		2.000	3.67	44.0	1.375	2.000	10.1	121.
					1.500	1.38	16.6		2.250	4.13	49.6		1.500	1.750	9.67
.0938	.250	.0857	1.03	.3125	.375	.430	5.16	.625	.750	1.72	20.6	1.750	2.000	12.8	154.
	.375	.129	1.55		.500	.574	6.89		.875	2.01	24.1		2.500	16.1	193.
	.500	.171	2.05		.625	.717	8.60		1.000	2.30	27.6		3.000	19.3	232.
	.625	.214	2.57		.750	.861	10.3		1.250	2.87	34.4		3.500	22.6	271.
	.750	.258	3.10		.875	1.00	12.0		1.375	3.17	38.0	2.000	2.500	18.4	221.
	.875	.300	3.60		1.000	1.15	13.8		1.500	3.45	41.4		2.750	20.3	244.
	1.000	.343	4.12		1.250	1.43	17.2		1.750	4.02	48.2		3.000	22.0	264.
	1.250	.428	5.14		1.500	1.72	20.6		2.000	4.59	55.1	2.500	3.500	25.8	310.
	1.500	.514	6.17		1.750	2.01	24.1		2.250	5.18	62.2		4.000	29.4	353.
	2.000	.685	8.22		2.000	2.30	27.6		2.500	5.74	68.9		3.000	27.5	330.
2.500	.857	10.3	2.500	2.87	34.4	.750	3.000	6.90	82.8	3.000	3.500	32.2	386.		
.125	.250	.115	1.38	.375	.500		.688	8.26	4.000		9.18	110.	4.000	36.7	440.
	.3125	.144	1.73		.625		.861	10.3					5.000	44.2	530.
	.375	.172	2.06		.750		1.00	12.0					5.000	55.2	662.
	.4375	.201	2.41		.875		1.15	13.8							
	.500	.230	2.76		1.000		1.43	17.2							
	.5625	.259	3.11		1.250		1.72	20.6							
	.625	.287	3.44		1.500		2.01	24.1							
	.750	.344	4.13		1.750		2.30	27.6							
	.875	.402	4.82		2.000		2.87	34.4							
	1.000	.459	5.51		2.500		3.17	38.0							
.1875	.250	.172	2.06	.4375	.750	1.20	14.4	.875	1.000	3.21	38.5	1.000	1.250	4.59	55.1
	.3125	.217	2.60		1.000	1.38	16.6		1.250	4.03	48.4		1.500	5.51	66.1
	.375	.258	3.10		1.250	1.72	20.6		1.500	4.84	58.1		1.750	6.43	77.2
	.4375	.304	3.65		1.500	2.07	24.8		1.750	5.18	62.2		2.000	7.34	88.1
	.500	.344	4.13		1.750	2.41	28.9		2.000	5.74	68.9		2.250	8.26	99.1
	.625	.430	5.16		2.000	2.75	33.0						2.500	9.18	110.
	.750	.516	6.19		2.250	3.09	37.1						3.000	11.0	132.
	.875	.602	7.22		2.500	3.44	41.3						3.500	12.8	154.
	1.000	.688	8.26		2.750	3.80	45.6						4.000	14.7	176.
	1.125	.777	9.32		3.000	4.13	49.6						5.000	18.4	221.
	.250	.172	2.06		4.000	5.51	66.1		6.000	16.5	198.		6.000	22.0	264.
	.3125	.217	2.60		4.500	5.18	62.2								
	.375	.258	3.10		5.000	6.22	74.6								
	.4375	.304	3.65		5.500	6.88	82.6								
	.500	.344	4.13		6.000	8.26	99.1								
	.625	.430	5.16												
	.750	.516	6.19												
	.875	.602	7.22												
	1.000	.688	8.26												
	1.125	.777	9.32												

BRASS (cont)

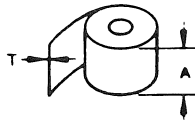
WEIGHT (LBS PER FT)

Spring Brass
in Rolls

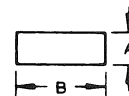
Thickness T		Dimension A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge		
.010	30 ga.	12.000	.444
.0126	28 ga.	6.000	.279
.0159	26 ga.	6.000	.352
.0201	24 ga.	6.000	.445
.0201	24 ga.	12.000	.891
.0253	22 ga.	6.000	.561
.0253	22 ga.	12.000	1.12
.032	20 ga.	6.000	.710
.032	20 ga.	12.000	1.42
.0359	19 ga.	6.000	.796
.0359	19 ga.	12.000	1.59
.040	18 ga.	6.000	.887
.040	18 ga.	12.000	1.77
.0508	16 ga.	6.000	1.13
.0508	16 ga.	12.000	2.25
.0641	14 ga.	6.000	1.42
.0641	14 ga.	12.000	2.84

One-quarter Hard Brass
in Rolls

Thickness T		Dimension A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge		
.010	30 ga.	12.000	.444
.0201	24 ga.	6.000	.445
.0201	24 ga.	12.000	.891
.0201	24 ga.	24.000	1.78
.0253	22 ga.	6.000	.561
.0253	22 ga.	12.000	1.12
.0253	22 ga.	24.000	2.24
.0285	21 ga.	10.000	1.05
.0285	21 ga.	12.000	1.26
.032	20 ga.	6.000	.710
.032	20 ga.	12.000	1.42
.032	20 ga.	24.000	2.84
.036	19 ga.	6.000	.796
.0403	18 ga.	6.000	.895
.0403	18 ga.	12.000	1.79
.0403	18 ga.	24.000	3.58
.0508	16 ga.	6.000	1.13
.0508	16 ga.	12.000	2.25
.0641	14 ga.	6.000	1.42
.0641	14 ga.	12.000	2.84
.0641	14 ga.	24.000	5.68

Hard Brass
in Rolls

Thickness T		Dimension A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge		
.001	50 ga.	6.000	.0221
.0015	46 ga.	6.000	.0331
.002	44 ga.	6.000	.0444
.003	40 ga.	6.000	.0665
.004	38 ga.	6.000	.0886
.005	36 ga.	6.000	.111
.005	36 ga.	12.000	.222
.006	34 ga.	6.000	.133
.007	33 ga.	6.000	.155
.008	32 ga.	6.000	.177
.008	32 ga.	12.000	.355
.010	30 ga.	6.000	.222
.010	30 ga.	12.000	.444
.0159	26 ga.	6.000	.352
.0159	26 ga.	12.000	.705
.0179	25 ga.	12.000	.794
.0201	24 ga.	6.000	.445
.0201	24 ga.	12.000	.891
.0253	22 ga.	6.000	.561
.0253	22 ga.	12.000	1.12
.032	20 ga.	6.000	.710
.032	20 ga.	12.000	1.42
.036	19 ga.	6.000	.796
.0403	18 ga.	6.000	.895
.0403	18 ga.	12.000	1.79
.0508	16 ga.	6.000	1.13
.0508	16 ga.	12.000	2.25
.064	14 ga.	6.000	1.42
.064	14 ga.	12.000	2.84

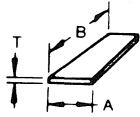
Hard Brass Strip
Slit Edge - 12 Foot Mill Lengths

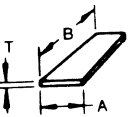
Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Lengths
.0625	.250	.0578	.694
	.375	.0866	1.04
	.500	.116	1.39
	.625	.143	1.72
	.750	.173	2.08
	.875	.201	2.41
	1.000	.231	2.77
	1.500	.347	4.16
.0938	2.000	.462	5.54
	.250	.086	1.03
	.375	.129	1.55
	.500	.172	2.06
	.625	.215	2.58
	.750	.258	3.10
	.875	.301	3.61
	1.000	.344	4.13
2.500	1.250	.433	5.20
	1.500	.520	6.24
	2.000	.693	8.32
		.866	10.4

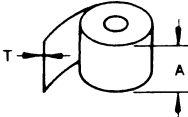
BRASS (cont)

ASTM B36, ALLOY C26000

WEIGHT (LBS PER FT) (cont)

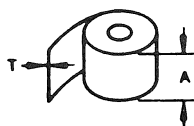
 Soft Brass Sheet				
Dimension T		Dim A Inch	Dim B Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge			
.010	30 ga.	12.000	96.000	.443
.0126	28 ga.	12.000	96.000	.572
.0159	26 ga.	12.000	96.000	.705
.0159	26 ga.	18.000	96.000	1.06
.018	25 ga.	12.000	96.000	.789
.0201	24 ga.	12.000	96.000	.886
.0201	24 ga.	24.000	96.000	1.77
.0253	22 ga.	12.000	96.000	1.12
.0253	22 ga.	18.000	96.000	1.68
.0253	22 ga.	24.000	96.000	2.24
.032	20 ga.	12.000	96.000	1.41
.032	20 ga.	18.000	96.000	2.12
.032	20 ga.	24.000	96.000	2.82
.032	20 ga.	36.000	96.000	4.23
.036	19 ga.	12.000	96.000	1.59
.036	19 ga.	24.000	96.000	3.18
.0403	18 ga.	12.000	96.000	1.78
.0403	18 ga.	18.000	96.000	2.67
.0403	18 ga.	24.000	96.000	3.56
.0403	18 ga.	36.000	96.000	5.34
.0453	17 ga.	12.000	96.000	2.00
.0508	16 ga.	12.000	96.000	2.25
.0508	16 ga.	24.000	96.000	4.60
.0508	16 ga.	36.000	96.000	6.75
.0571	15 ga.	12.000	96.000	2.53
.0625	1/16	12.000	96.000	2.75
.0625	1/16	18.000	96.000	4.13
.0625	1/16	24.000	96.000	5.50
.0625	1/16	36.000	96.000	8.25
.072	13 ga.	12.000	96.000	3.17
.0808	12 ga.	12.000	96.000	3.58
.093	3/32	12.000	96.000	4.13
.093	3/32	18.000	96.000	6.20
.093	3/32	24.000	96.000	8.26
.093	3/32	36.000	96.000	12.39
.1019	10 ga.	12.000	96.000	4.52
.1144	9 ga.	12.000	96.000	5.07
.125	1/8	12.000	96.000	5.50
.125	1/8	24.000	96.000	11.02
.125	1/8	36.000	96.000	16.53
.156	5/32	12.000	96.000	6.85
.1875	3/16	12.000	96.000	8.31
.1875	3/16	24.000	96.000	16.62
.1875	3/16	36.000	96.000	24.93
.218	7/32	12.000	96.000	9.70
.250	1/4	12.000	96.000	11.1
.250	1/4	24.000	96.000	22.2
.250	1/4	36.000	96.000	33.3

 One-half Hard Brass Sheet				
Dimension T		Dim A Inch	Dim B Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge			
.010	30 ga.	12.000	96.000	.441
.0126	28 ga.	12.000	96.000	.572
.0159	26 ga.	12.000	96.000	.705
.0159	26 ga.	18.000	96.000	1.05
.018	25 ga.	12.000	96.000	.789
.0201	24 ga.	12.000	96.000	.886
.0201	24 ga.	24.000	96.000	1.77
.0253	22 ga.	12.000	96.000	1.12
.0253	22 ga.	18.000	96.000	1.65
.0253	22 ga.	24.000	96.000	2.24
.032	20 ga.	12.000	96.000	1.41
.032	20 ga.	18.000	96.000	2.11
.032	20 ga.	24.000	96.000	2.82
.032	20 ga.	36.000	96.000	4.22
.036	19 ga.	12.000	96.000	1.58
.036	19 ga.	24.000	96.000	3.16
.0403	18 ga.	12.000	96.000	1.78
.0403	18 ga.	18.000	96.000	2.67
.0403	18 ga.	24.000	96.000	3.56
.0403	18 ga.	36.000	96.000	5.34
.0453	17 ga.	12.000	96.000	2.00
.0508	16 ga.	12.000	96.000	2.24
.0508	16 ga.	24.000	96.000	4.48
.0508	16 ga.	36.000	96.000	6.72
.0571	15 ga.	12.000	96.000	2.52
.0625	1/16	12.000	96.000	2.75
.0625	1/16	24.000	96.000	5.50
.0625	1/16	36.000	96.000	8.25
.072	13 ga.	12.000	96.000	3.17
.0808	12 ga.	12.000	96.000	3.56
.093	3/32	12.000	96.000	4.13
.093	3/32	24.000	96.000	8.26
.093	3/32	36.000	96.000	12.39
.1019	10 ga.	12.000	96.000	4.49
.1144	9 ga.	12.000	96.000	5.04
.125	1/8	12.000	96.000	5.50
.125	1/8	24.000	96.000	11.02
.125	1/8	36.000	96.000	16.53
.156	5/32	12.000	96.000	6.85
.1875	3/16	12.000	96.000	8.31
.1875	3/16	24.000	96.000	16.62
.1875	3/16	36.000	96.000	24.78
.218	7/32	12.000	96.000	9.64
.250	1/4	12.000	96.000	11.0
.250	1/4	24.000	96.000	22.0
.250	1/4	36.000	96.000	33.0

 One-half Hard Brass Sheet			
Dimension T		Dim A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge		
.001	50 ga.	6.000	.0221
.0015	46 ga.	6.000	.0331
.002	44 ga.	6.000	.0444
.003	40 ga.	6.000	.0665
.004	38 ga.	6.000	.0886
.005	36 ga.	6.000	.111
.005	36 ga.	12.000	.222
.006	34 ga.	6.000	.133
.007	33 ga.	6.000	.155
.008	32 ga.	6.000	.177
.008	32 ga.	12.000	.355
.010	30 ga.	6.000	.222
.010	30 ga.	12.000	.444
.0126	28 ga.	6.000	.279
.0126	28 ga.	12.000	.559
.0126	28 ga.	18.000	.839
.0159	26 ga.	6.000	.352
.0159	26 ga.	8.000	.470
.0159	26 ga.	12.000	.705
.0159	26 ga.	24.000	1.41
.0179	25 ga.	6.000	.397
.0179	25 ga.	12.000	.794
.0179	25 ga.	24.000	1.59
.0201	24 ga.	6.000	.445
.0201	24 ga.	12.000	.891
.0201	24 ga.	24.000	1.78
.0253	22 ga.	6.000	.561
.0253	22 ga.	8.000	.748
.0253	22 ga.	12.000	1.12
.0253	22 ga.	24.000	2.24
.0285	21 ga.	6.000	.632
.0285	21 ga.	8.000	.839
.0285	21 ga.	12.000	1.26
.0285	21 ga.	24.000	2.52
.032	20 ga.	6.000	.710
.032	20 ga.	12.000	1.42
.032	20 ga.	24.000	2.84
.036	19 ga.	6.000	.796
.036	19 ga.	12.000	1.59
.036	19 ga.	24.000	3.18
.0403	18 ga.	6.000	.895
.0403	18 ga.	12.000	1.79
.0403	18 ga.	24.000	3.58
.0453	17 ga.	6.000	1.00
.0453	17 ga.	12.000	2.00
.0508	16 ga.	6.000	1.13
.0508	16 ga.	12.000	2.25
.0508	16 ga.	24.000	4.50
.0571	15 ga.	6.000	1.27
.0571	15 ga.	12.000	2.54
.0625	1/16	6.000	1.38
.0625	1/16	12.000	2.75
.0625	1/16	24.000	5.50
.0641	14 ga.	6.000	1.42
.0641	14 ga.	12.000	2.84
.0641	14 ga.	24.000	5.68
.072	13 ga.	12.000	3.19

BRASS (cont)

WEIGHT (LBS PER FT) (cont)

Soft Brass
in Rolls

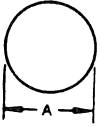
Dimension T		Dimension A Inch	Pounds Linear Foot	Dimension T		Dimension A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge			In Inch	Fraction or B & S Gauge		
.005	36 ga.	6.000	.111	.0285	21 ga.	6.000	.630
.005	36 ga.	12.000	.222	.0285	21 ga.	8.000	.839
.006	34 ga.	6.000	.133	.0285	21 ga.	12.000	1.26
.008	32 ga.	6.000	.177	.0285	21 ga.	24.000	2.52
.008	32 ga.	12.000	.355	.032	20 ga.	6.000	.710
.010	30 ga.	6.000	.220	.032	20 ga.	8.000	.946
.010	30 ga.	12.000	.440	.032	20 ga.	12.000	1.42
.0126	28 ga.	6.000	.279	.032	20 ga.	24.000	2.84
.0126	28 ga.	12.000	.559	.036	19 ga.	6.000	.796
.0126	28 ga.	18.000	.838	.036	19 ga.	12.000	1.59
.0159	26 ga.	6.000	.352	.036	19 ga.	24.000	3.18
.0159	26 ga.	8.000	.470	.0403	18 ga.	6.000	.895
.0159	26 ga.	12.000	.705	.0403	18 ga.	12.000	1.79
.0159	26 ga.	24.000	1.41	.0453	18 ga.	24.000	3.58
.0179	25 ga.	6.000	.397	.0453	17 ga.	6.000	1.00
.0179	25 ga.	12.000	.794	.0453	17 ga.	12.000	2.00
.0179	25 ga.	24.000	1.59	.0508	16 ga.	6.000	1.13
.0201	24 ga.	6.000	.445	.0508	16 ga.	12.000	2.25
.0201	24 ga.	8.000	.594	.0508	16 ga.	24.000	4.50
.0201	24 ga.	12.000	.891	.0571	15 ga.	6.000	1.26
.0201	24 ga.	24.000	1.78	.0571	15 ga.	12.000	2.52
.0253	22 ga.	6.000	.560	.0625	1/16	6.000	1.39
.0253	22 ga.	8.000	.748	.0625	1/16	12.000	2.77
.0253	22 ga.	12.000	1.12	.0625	1/16	24.000	5.54
.0253	22 ga.	24.000	2.24	.0641	14 ga.	6.000	1.41
				.0641	14 ga.	12.000	2.83
				.0641	14 ga.	24.000	5.66
				.072	13 ga.	12.000	3.19

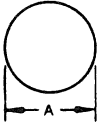
Cold Heading Brass Wire
in Coils

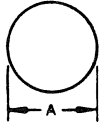
Dimension A in Inch	Pounds Per Foot	Pounds Linear Foot
.136	.0533	18.8
.182	.0953	10.5
.200	.1152	8.7
.225	.1457	6.9
.270	.2100	4.8
.305	.2678	3.8
.315	.2857	3.5
.360	.3732	2.7
.399	.4585	2.2
.440	.5576	1.8
.518	.7727	1.3

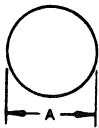
BRASS (cont)

WEIGHT (LBS PER FT) (cont)

Spring Brass Wire in Coils			
			
Dimension A		Pounds Per Foot	Linear Feet Per Pound
In Inch	Fraction or B & S Gauge		
.010	30 ga.	.0003	3334.
.0201	24 ga.	.0012	840.
.032	20 ga.	.0029	345.
.0403	18 ga.	.0047	213.
.0508	16 ga.	.0074	135.
.0641	14 ga.	.0118	85.0
.072	13 ga.	.0150	67.0
.0808	12 ga.	.0188	53.5
.0907	11 ga.	.0237	42.5
.1019	10 ga.	.0299	33.5
.1285	8 ga.	.0476	21.0
.1443	7 ga.	.0600	16.7
.1819	5 ga.	.0954	10.5

One-Half Hard Brass Wire in Coils			
			
Dimension A		Pounds Per Foot	Linear Feet Per Pound
In Inch	Fraction or B & S Gauge		
.0403	18 ga.	.0047	213.
.0808	12 ga.	.0188	53.5
.0907	11 ga.	.0239	42.5

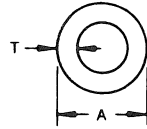
Soft Brass Wire in Coils			
			
Dimension A		Pounds Per Foot	Linear Feet Per Pound
In Inch	Fraction or B & S Gauge		
.032	20 ga.	.0029	345.
.0641	14 ga.	.0118	85.0
.0907	11 ga.	.0237	42.5
.1285	8 ga.	.0476	21.0

Full Hard Brass Wire 12 Foot Mill Lengths			
			
Dimension A		Pounds Per Foot	Linear Feet Per Pound
In Inch	Fraction or B & S Gauge		
.0907	11 ga.	.0237	42.5
.114	9 ga.	.0377	26.6
.1285	8 ga.	.0476	21.0
.162	6 ga.	.0757	13.2
.1875	3/16	.102	9.8
.250	1/4	.181	5.5

BRASS (cont)

ASTM B135, ALLOY C26000

WEIGHT (LBS PER FT)



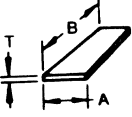
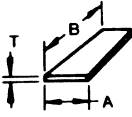
Brass Tube
12 Foot Mill Lengths

Dimension A Inch	Dimension T		Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Dimension T		Pounds Per Foot	Pounds 12 Foot Length	Dimension A Inch	Dimension T		Pounds Per Foot	Pounds 12 Foot Length
	In Inch	Fraction or Stub's Gauge				In Inch	Fraction or Stub's Gauge				In Inch	Fraction or Stub's Gauge		
.125	.016	27 ga.	.0202	.242	.875	.125	1/8	1.09	13.1	2.250	.250	1/4	5.81	69.7
.125	.028	22 ga.	.0316	.349	.9375	.032	21 ga.	.337	4.04	2.375	.032	21 ga.	.868	10.4
.125	.032	21 ga.	.0345	.414	.9375	.049	18 ga.	.506	6.07	2.375	.065	16 ga.	1.74	20.9
.125	.035	20 ga.	.0366	.439	.9375	.125	1/8	1.18	14.2	2.375	.125	1/8	3.26	39.1
.1563	.016	27 ga.	.0260	.312	1	.032	21 ga.	.360	4.32	2.500	.035	20 ga.	1.00	12.0
.1563	.035	20 ga.	.0493	.592	1.000	.049	18 ga.	.541	6.49	2.500	.065	16 ga.	1.83	22.0
.1875	.020	25 ga.	.0389	.467	1.000	.065	16 ga.	.706	8.47	2.500	.092	13 ga.	2.55	30.6
.1875	.025	25 ga.	.0472	.566	1.000	.091	13 ga.	.950	11.0	2.500	.125	1/8	3.44	41.3
.1875	.028	22 ga.	.0519	.623	1.000	.125	1/8	1.27	15.2	2.500	.250	1/4	6.53	78.4
.1875	.032	21 ga.	.0578	.694	1.0625	.125	1/8	1.36	16.2	2.625	.065	16 ga.	1.93	23.2
.1875	.049	18 ga.	.0788	.972	1.125	.032	21 ga.	.406	4.87	2.750	.065	16 ga.	2.02	24.2
.250	.028	22 ga.	.0722	.866	1.125	.065	16 ga.	.800	9.60	2.750	.125	1/8	3.82	45.8
.250	.032	21 ga.	.0810	.972	1.125	.125	1/8	1.45	17.4	3.000	.032	21 ga.	1.10	13.2
.250	.049	18 ga.	.114	1.37	1.1875	.032	21 ga.	.429	5.15	3.000	.065	16 ga.	2.21	26.5
.250	.065	16 ga.	.139	1.67	1.1875	.065	16 ga.	.847	10.2	3.000	.125	1/8	4.18	50.2
.3125	.025	23 ga.	.083	1.00	1.1875	.125	1/8	1.55	18.6	3.000	.250	1/4	7.98	95.8
.3125	.032	21 ga.	.104	1.25	1.250	.032	21 ga.	.453	5.44	3.125	.060		2.13	25.6
.3125	.049	18 ga.	.150	1.80	1.250	.035	20 ga.	.494	5.93	3.250	.065	16 ga.	2.40	28.8
.3125	.065	16 ga.	.187	2.24	1.250	.049	18 ga.	.684	8.21	3.250	.125	1/8	4.54	54.5
.375	.025	23 ga.	.102	1.22	1.250	.065	16 ga.	.895	10.7	3.250	.250	1/4	8.71	105.
.375	.032	21 ga.	.128	1.54	1.250	.125	1/8	1.63	19.6	3.500	.065	16 ga.	2.58	31.0
.375	.049	18 ga.	.186	2.23	1.3125	.065	16 ga.	.942	11.3	3.500	.125	1/8	4.90	58.8
.375	.065	16 ga.	.234	2.81	1.3125	.125	1/8	1.73	20.8	3.500	.250	1/4	9.43	113.
.375	.072	13 ga.	.254	3.05	1.375	.028	22 ga.	.438	5.26	3.625	.0625	1/16	2.67	32.0
.375	.087	12 ga.	.288	3.46	1.375	.032	21 ga.	.499	5.99	3.750	.065	16 ga.	2.77	33.2
.375	.093	11 ga.	.306	3.67	1.375	.049	18 ga.	.755	9.06	3.750	.125	1/8	5.26	63.5
.4375	.020	25 ga.	.097	1.16	1.375	.065	16 ga.	.992	11.9	4.000	.125	1/8	5.63	67.6
.4375	.032	21 ga.	.151	1.81	1.375	.120	11 ga.	1.75	21.0	4.000	.250	1/4	10.9	131.
.4375	.049	18 ga.	.221	2.65	1.375	.125	1/8	1.81	21.7	4.125	.0625	1/16	3.06	36.7
.4375	.065	16 ga.	.281	3.37	1.4375	.028	22 ga.	.459	5.51	4.250	.125	1/8	5.99	71.9
.500	.020	25 ga.	.112	1.34	1.4375	.125	1/8	1.91	22.9	4.500	.125	1/8	6.35	76.2
.500	.032	21 ga.	.174	2.09	1.500	.032	21 ga.	.546	6.55	4.500	.250	1/4	12.4	149.
.500	.049	18 ga.	.257	3.08	1.500	.035	20 ga.	.595	7.14	4.500	.125	1/8	6.71	80.5
.500	.065	16 ga.	.328	3.94	1.500	.049	18 ga.	.826	9.91	5.000	.0625	1/16	3.69	44.3
.500	.125	1/8	.545	6.54	1.500	.065	16 ga.	1.09	13.1	5.000	.065	16 ga.	3.73	44.8
.5625	.032	21 ga.	.198	2.38	1.500	.094	13 ga.	1.49	17.9	5.000	.125	1/8	7.08	85.0
.5625	.035	20 ga.	.215	2.58	1.500	.125	1/8	1.99	23.9	5.000	.250	1/4	13.8	166.
.5625	.058	17 ga.	.340	4.08	1.5625	.032	21 ga.	.547	6.56	5.250	.125	1/8	7.44	89.3
.5625	.065	16 ga.	.376	4.51	1.5625	.065	16 ga.	1.12	13.4	5.500	.125	1/8	7.80	93.6
.625	.020	25 ga.	.140	1.68	1.5625	.095	13 ga.	1.61	19.3	5.500	.250	1/4	15.3	184.
.625	.025	23 ga.	.175	2.10	1.625	.032	21 ga.	.592	7.10	5.750	.125	1/8	8.17	98.0
.625	.032	21 ga.	.220	2.64	1.625	.065	16 ga.	1.17	14.0	6.000	.125	1/8	8.53	102.
.625	.035	20 ga.	.239	2.87	1.625	.125	1/8	2.18	26.2	6.000	.250	1/4	16.7	200.
.625	.049	18 ga.	.328	3.94	1.750	.032	21 ga.	.636	7.66	6.250	.125	1/8	8.89	107.
.625	.065	16 ga.	.423	5.08	1.750	.035	20 ga.	.697	8.36	6.500	.250	1/4	18.1	217.
.625	.083	14 ga.	.523	6.28	1.750	.040	19 ga.	.795	9.54	7.000	.250	1/4	19.6	235.
.625	.125	1/8	.726	8.71	1.750	.049	18 ga.	.964	11.6	7.250	.125	1/8	10.4	125.
.6875	.032	21 ga.	.243	2.92	1.750	.065	16 ga.	1.27	15.2	7.500	.250	1/4	21.1	253.
.6875	.065	16 ga.	.470	5.64	1.750	.125	1/8	2.36	28.3	8.000	.250	1/4	22.5	270.
.750	.028	22 ga.	.234	2.81	1.750	.187	3/16	3.40	40.8	8.250	.125	1/8	11.8	142.
.750	.032	21 ga.	.266	3.19	1.875	.028	22 ga.	.601	7.21	8.500	.125	1/8	12.2	146.
.750	.035	20 ga.	.291	3.49	1.875	.032	21 ga.	.685	8.22	8.500	.250	1/4	24.0	288.
.750	.049	18 ga.	.399	4.79	1.875	.065	16 ga.	1.36	16.3	9.250	.125	1/8	13.2	158.
.750	.065	16 ga.	.517	6.20	1.875	.125	1/8	2.58	31.0	9.500	.250	1/4	26.9	323.
.750	.083	14 ga.	.643	7.72	2.000	.035	20 ga.	.798	9.58	10.000	.250	1/4	28.4	341.
.750	.120	11 ga.	.879	10.6	2.000	.049	18 ga.	1.11	13.3	10.250	.125	1/8	14.7	176.
.750	.125	1/8	.907	10.9	2.000	.065	16 ga.	1.46	17.5	10.500	.250	1/4	29.8	358.
.8125	.028	22 ga.	.255	3.06	2.000	.125	1/8	2.72	32.6	12.250	.125	1/8	17.5	210.
.8125	.032	21 ga.	.290	3.48	2.000	.250	1/4	5.08	61.0	12.3125	.156	5/32	21.8	262.
.8125	.065	16 ga.	.562	6.74	2.0625	.032	21 ga.	.756	9.07	12.375	.187	3/16	26.5	318.
.8125	.125	1/8	1.00	12.0	2.125	.065	16 ga.	1.55	18.6	12.750	.375	3/8	53.7	644.
.875	.035	20 ga.	.342	4.10	2.125	.125	1/8	2.89	34.7					
.875	.049	18 ga.	.470	5.64	2.250	.032	21 ga.	.821	9.85					
.875	.065	16 ga.	.612	7.34	2.250	.065	16 ga.	1.64	19.7					
.875	.109	12 ga.	.973	11.7	2.250	.125	1/8	3.08	37.0					

COPPER

ASTM B152, ALLOY C11000

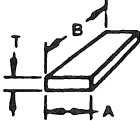
WEIGHT

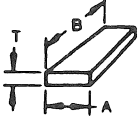
 Soft Sheet Copper						 Cold Rolled Sheet Copper					
Weight Per Square Foot		Dimension T	Dimension A	Dimension B	Pounds Per Sheet	Weight Per Square Foot		Dimension T	Dimension A	Dimension B	Pounds Per Sheet
Ounces	Pounds	Inch, Pounds	Inch	Inch		Ounces	Pounds	Inch, Pounds	Inch	Inch	
12	.750	.0162	36.000	96.000	18.0	14	.875	.0189	30.000	96.000	17.5
14	.875	.0189	30.000	96.000	17.5	14	.875	.0189	36.000	96.000	21.0
14	.875	.0189	36.000	96.000	21.0	16	1.0	.0216	24.000	120.000	20.0
16	1.00	.0216	24.000	120.000	20.0	16	1.0	.0216	24.000	96.000	16.0
16	1.00	.0216	24.000	96.000	16.0	16	1.0	.0216	30.000	120.000	25.0
16	1.00	.0216	30.000	120.000	30.0	16	1.0	.0216	30.000	96.000	20.0
16	1.00	.0216	30.000	96.000	20.0	16	1.0	.0216	36.000	120.000	30.0
16	1.00	.0216	36.000	120.000	30.0	16	1.0	.0216	36.000	96.000	24.0
16	1.00	.0216	36.000	96.000	24.0	18	1.125	.0243	30.000	96.000	22.5
18	1.125	.0243	30.000	96.000	22.5	18	1.125	.0243	36.000	96.000	27.0
18	1.125	.0243	36.000	96.000	27.0	20	1.25	.027	24.000	120.000	25.0
18	1.125	.0243	36.000	120.000	33.7	20	1.25	.027	30.000	96.000	25.0
20	1.25	.027	30.000	96.000	25.0	20	1.25	.027	30.000	120.000	31.2
20	1.25	.027	36.000	120.000	37.5	20	1.25	.027	36.000	120.000	37.5
20	1.25	.027	36.000	96.000	30.0	20	1.25	.027	36.000	96.000	30.0
24	1.50	.0323	30.000	96.000	30.0	24	1.50	.0323	30.000	96.000	30.0
24	1.50	.0323	36.000	120.000	45.0	24	1.50	.0323	36.000	120.000	45.0
24	1.50	.0323	36.000	96.000	36.0	24	1.50	.0323	36.000	96.000	36.0
24	1.50	.0323	48.000	96.000	48.0	24	1.50	.0323	48.000	120.000	60.0
32	2.00	.0431	30.000	96.000	40.0	32	2.00	.0431	30.000	96.000	40.0
32	2.00	.0431	30.000	120.000	50.0	32	2.00	.0431	36.000	120.000	60.0
32	2.00	.0431	36.000	120.000	60.0	32	2.00	.0431	36.000	96.000	48.0
32	2.00	.0431	36.000	96.000	48.0	40	2.50	.0539	36.000	96.000	60.0
40	2.37	.051	36.000	96.000	56.9	48	3.00	.0647	30.000	96.000	60.0
40	2.50	.0239	36.000	96.000	60.0	48	3.00	.0647	36.000	96.000	72.0
48	3.00	.0647	30.000	96.000	60.0	48	3.00	.0647	48.000	96.000	96.0
48	3.00	.0647	36.000	96.000	72.0	48	4.36	.0937	36.000	96.000	105.
	4.36	.0937	36.000	96.000	105.		5.81	.125	36.000	96.000	139.
	5.81	.125	30.000	96.000	116.		5.81	.125	48.000	96.000	186.
	5.81	.125	36.000	96.000	139.		8.72	.1875	36.000	96.000	209.
							11.63	.250	36.000	96.000	279.

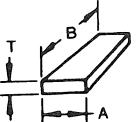
COPPER (cont)

ASTM B152, ALLOY C11000 (cont)

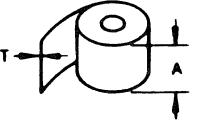
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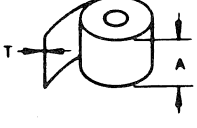
 Heavy Copper Plate Cold Rolled Temper				
Dimension T Inch	Dimension A Inch	Dimension B Inch	Pounds Square Inch	Pounds Square Foot
.1875	12	96 & 120	.061	8.72
.1875	36	96 & 120	.061	8.72
.250	12	96 & 120	.081	11.6
.250	36	96 & 120	.081	11.6
.375	12	96 & 120	.121	17.4
.375	36	96 & 120	.121	17.4
.500	12	96 & 120	.161	23.2
.500	36	96 & 120	.161	23.2
.625	12	96 & 120	.201	28.9
.625	36	96 & 120	.201	28.9
.750	8	96 & 120	.242	34.8
.750	12	96 & 120	.242	34.8
.750	36	96 & 120	.242	34.8
1.000	7	96 & 120	.323	46.5
1.000	8	96 & 120	.323	46.5
1.000	9	96 & 120	.323	46.5
1.000	10	96 & 120	.323	46.5
1.000	12	96 & 120	.323	46.5
1.000	36	96 & 120	.323	46.5
1.250	5	96 & 120	.403	58.0
1.250	6	96 & 120	.403	58.0
1.250	8	96 & 120	.403	58.0
1.250	10	96 & 120	.403	58.0
1.250	12	96 & 120	.403	58.0
1.250	36	96 & 120	.403	58.0
1.375	36	96	.444	63.9
1.500	5	96 & 120	.483	69.6
1.500	6	96 & 120	.483	69.6
1.500	8	96 & 120	.483	69.6
1.500	10	96 & 120	.483	69.6
1.500	12	96 & 120	.483	69.6
1.500	36	96 & 120	.483	69.6
1.750	12	96 & 120	.563	81.1
1.750	36	96 & 120	.563	81.1
2.000	5	96 & 120	.645	92.9
2.000	6	96 & 120	.645	92.9
2.000	8	96 & 120	.645	92.9
2.000	10	96 & 120	.645	92.9
2.000	12	96 & 120	.645	92.9
2.000	36	96 & 120	.645	92.9
2.250	36	96	.727	105.
2.500	4	96 & 120	.805	116.
2.500	5	96 & 120	.805	116.
2.500	6	96 & 120	.805	116.
2.500	10	96	.805	116.
2.500	12	96	.805	116.
2.500	36	96	.805	116.
3.000	4	96 & 120	.965	139.
3.000	6	96 & 120	.965	139.
3.000	10	96	.965	139.
3.000	12	96	.965	139.
3.000	24	96	.965	139.
3.500	6	96 & 120	1.13	163.
3.500	10	96	1.13	163.
3.500	12	96	1.13	163.
3.500	24	96	1.13	163.
4.000	5	96 & 120	1.29	186.
4.000	10	96	1.29	186.
4.000	12	96	1.29	186.
4.000	24	96	1.29	186.
5.000	23	82	1.62	233.
5.000	24	96	1.62	233.

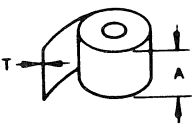
 Half Hard Copper Strip and Plate					
Dimension T		Dimension A Inch	Dimension B Inch	Pounds Square Inch	Pounds Square Foot
In Inch	Fraction or B & S Gauge				
.032	20 ga.	12	96	.010	1.49
.032	20 ga.	18	144	.010	1.49
.0403	18 ga.	12	96	.013	1.87
.0508	16 ga.	12	96	.016	2.36
.0625	1/16	6	96	.020	2.91
.0625	1/16	12	96	.020	2.91
.0641	14 ga.	12	96	.021	2.98
.0808	12 ga.	12	96	.026	3.76
.0937	3/32	12	96	.030	4.36
.125	1/8	12	96	.040	5.81
.1875	3/16	12	96	.061	8.72
.250	1/4	12	96	.081	11.6
.375	3/8	12	96	.121	17.4
.500	1/2	12	96	.162	23.3
.625	5/8	12	96	.202	29.1
.625	5/8	12	96	.202	29.1
.750	3/4	12	96	.242	34.9
1.000	1	12	96	.323	46.5
1.250	1	12	96	.323	58.1
1.375	1-3/8	12	96	.444	64.0
1.500	1-1/2	12	96	.485	69.8
1.750	1-3/4	12	96	.565	81.4
2.000	2	12	96	.646	93.0
2.250	2-1/4	12	96	.727	105.
2.500	2-1/2	12	96	.808	116.
2.750	2-3/4	12	96	.888	128.
3.000	3	12	96	.969	140.
3.500	3-1/2	12	96	1.13	163.
4.000	4	12	96	1.29	186.

 Soft Copper Strip				
Dimension T		Dimension A Inch	Dimension B Inch	Pounds Square Foot
Inch	Fraction or B & S Gauge			
.032	20 ga.	12	96	1.49
.0403	18 ga.	12	96	1.87
.0508	16 ga.	12	96	2.36
.0625	1/16	12	96	2.91
.072	13 ga.	12	96	3.35
.0808	12 ga.	12	96	3.76
.093	3/32	12	96	4.32
.125	1/8	12	96	5.81

COPPER (cont)**WEIGHT (cont)**

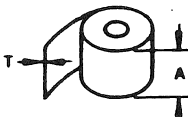
 Soft Copper in Rolls			
Dimension T		Dimension A Inch	Pounds Linear Foot
in Inch	Fraction or B & S Gauge		
.002	44 ga.	2.000	.016
.0031	40 ga.	3.000	.036
.0031	40 ga.	6.000	.072
.004	38 ga.	9.000	.140
.004	38 ga.	12.000	.186
.0042	-	25.000	.406
.005	36 ga.	1.250	.024
.005	36 ga.	2.000	.039
.005	36 ga.	3.000	.058
.005	36 ga.	12.000	.233
.008	32 ga.	12.000	.372
.010	30 ga.	3.000	.116
.010	30 ga.	4.000	.155
.010	30 ga.	6.000	.233
.010	30 ga.	12.000	.465
.0126	28 ga.	12.000	.586
.013	28 ga.	12.000	.605
.0159	26 ga.	12.000	.739
.0201	24 ga.	12.000	.935
.0216		6.000	.500
.0216		7.000	.583
.0216		8.000	.667
.0216		10.000	.833
.0216		12.000	1.00
.0216		14.000	1.17
.0216		16.000	1.33
.0216		18.000	1.50
.0216		20.000	1.67
.0253	22 ga.	12.000	1.18
.032	20 ga.	12.000	1.49
.0403	18 ga.	12.000	1.87
.043		12.000	2.00
.0453	17 ga.	12.000	2.11
.0508	16 ga.	8.000	1.57
.0508	16 ga.	12.000	2.36
.0625	1/16	12.000	2.91
.0641	14 ga.	12.000	2.98

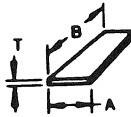
 One-half Hard Copper in Rolls			
Dimension T		Dimension A Inch	Pounds Linear Foot
in Inch	Fraction or B & S Gauge		
.005	36 ga.	1.375	.026
.005	36 ga.	2.000	.039
.005	36 ga.	3.000	.058
.005	36 ga.	6.000	.116
.005	36 ga.	12.000	.233
.0071	33 ga.	4.000	.110
.0071	33 ga.	12.000	.330
.010	30 ga.	2.000	.077
.010	30 ga.	3.000	.116
.010	30 ga.	4.000	.155
.010	30 ga.	6.000	.232
.010	30 ga.	12.000	.465
.0126	28 ga.	12.000	.586
.0159	26 ga.	12.000	.739
.0201	24 ga.	12.000	.935
.0216		8.000	.667
.253	22 ga.	12.000	1.18
.032	20 ga.	12.000	1.49
.0403	18 ga.	12.000	1.87
.0453	17 ga.	12.000	2.11
.0508	16 ga.	12.000	2.36
.0641	14 ga.	12.000	2.98

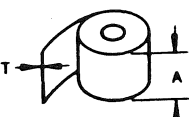
 Hard Copper in Rolls			
Dimension T		Dimension A Inch	Pounds Linear Foot
in Inch	Fraction or B & S Gauge		
.005	36 ga.	1.250	.024
.005	36 ga.	1.500	.029
.005	36 ga.	2.000	.039
.005	36 ga.	2.500	.048
.005	36 ga.	6.000	.116
.005	36 ga.	12.000	.233
.010	30 ga.	12.000	.465
.0159	26 ga.	12.000	.739
.0253	22 ga.	12.000	1.18
.032	20 ga.	12.000	1.49
.0403	18 ga.	12.000	1.87
.0453	17 ga.	12.000	2.11
.0508	16 ga.	12.000	2.36

COPPER BERYLLIUM

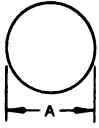
WEIGHT (LBS PER FOOT)

 Copper Beryllium in Rolls Heat-treatable Soft			
Dimension T		Dim A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge		
.0031	40	6 - 8	.074
.0040	38	6 - 8	.098
.0050	36	6 - 8	.126
.0063	34	6 - 8	.154
.0071	33	6 - 8	.175
.0080	32	6 - 8	.203
.0089	31	6 - 8	.217
.0100	30	6 - 8	.252
.0113	29	6 - 8	.280
.0126	28	6 - 8	.315
.0142	27	6 - 8	.357
.0150		6 - 8	.364
.0159	26	6 - 8	.399
.0172		6 - 8	.448
.0180	25	6 - 8	.481
.0201	24	6 - 8	.504
.0226	23	6 - 8	.588
.0253	22	6 - 8	.630
.0320	20	6 - 8	.798
.0403	18	6 - 8	1.000
.0453	17	6 - 8	1.130

 Copper Beryllium Sheet Heat-treatable				
Temper	Dim T Inch	Dim A Inch	Dim B Inch	Pounds Per Sheet
Soft	.051	6 - 8	96	10.4
Soft	.064	6 - 8	96	13.2
One-half Hard	.064	6 - 8	96	13.2

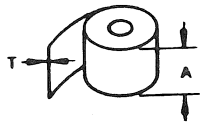
 Copper Beryllium in Rolls Heat-treatable One-half Hard			
Dimension T		Dim A Inch	Pounds Linear Foot
In Inch	Fraction or B & S Gauge		
.0031	40	6 - 8	.074
.0040	38	6 - 8	.098
.0050	36	6 - 8	.126
.0056	35	6 - 8	.140
.0060		6 - 8	.148
.0063	34	6 - 8	.154
.0071	33	6 - 8	.175
.0080	32	6 - 8	.203
.0089	31	6 - 8	.217
.0100	30	6 - 8	.252
.0113	29	6 - 8	.280
.0120		6 - 8	.289
.0126	28	6 - 8	.315
.0142	27	6 - 8	.357
.0150		6 - 8	.364
.0160	26	6 - 8	.399
.0172		6 - 8	.448
.0180	25	6 - 8	.481
.0201	24	6 - 8	.504
.0226	23	6 - 8	.588
.0253	22	6 - 8	.630
.0320	20	6 - 8	.798
.0403	18	6 - 8	1.000
.0453	17	6 - 8	1.130

COPPER BERYLLIUM (cont)
ASTM B196, ALLOY C17200
WEIGHT (LBS PER FOOT)

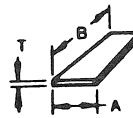
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Dimension A Inch	Pounds per Foot	Pounds 12 Foot Length
.0938	.025	.300
.125	.044	.528
.1563	.068	.816
.1875	.098	1.180
.2188	.135	1.620
.250	.175	2.100
.2813	.221	2.650
.3125	.273	3.280
.3438	.333	4.000
.375	.394	4.730
.4375	.536	6.430
.500	.700	8.400
.625	1.090	13.100
.6875	1.330	16.000
.750	1.570	18.800
.875	2.140	25.700
.9375	2.460	29.500
1.000	2.800	33.600
1.125	3.540	42.500
1.250	4.370	52.400
1.375	5.260	63.100
1.500	6.300	75.600
1.750	8.570	103.000
1.875	9.840	118.000
2.000	11.200	134.000
2.125	12.600	151.000
2.250	14.100	169.000
2.500	17.500	210.000
2.625	19.300	232.000
2.750	21.200	254.000
3.000	25.200	302.000
3.125	27.300	328.000
3.375	31.900	383.000
3.500	34.300	412.000
4.000	44.800	538.000

PHOSPHOR BRONZE

WEIGHT

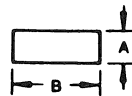
Spring Phosphor Bronze
In Rolls

Dimension T		Dimension A Inch	Pounds Linear Foot
Inch	Fraction or B & S Gauge		
.0031	40 ga.	8.000	.095
.005	36 ga.	8.000	.154
.005	36 ga.	12.000	.230
.0063	34 ga.	8.000	.194
.008	32 ga.	8.000	.246
.008	32 ga.	12.000	.369
.010	30 ga.	8.000	.307
.010	30 ga.	12.000	.461
.0126	28 ga.	8.000	.387
.0126	28 ga.	12.000	.581
.0159	26 ga.	8.000	.488
.0159	26 ga.	12.000	.733
.0179	25 ga.	8.000	.550
.0179	25 ga.	12.000	.825
.0201	24 ga.	8.000	.617
.0201	24 ga.	12.000	.926
.0253	22 ga.	8.000	.777
.0253	22 ga.	12.000	1.17
.032	20 ga.	8.000	.983
.032	20 ga.	12.000	1.47
.0359	19 ga.	8.000	1.10
.0359	19 ga.	12.000	1.65
.0403	18 ga.	8.000	1.24
.0403	18 ga.	12.000	1.86
.0453	17 ga.	8.000	1.40
.0453	17 ga.	12.000	2.09
.0508	16 ga.	8.000	1.56
.0508	16 ga.	12.000	2.34
.0641	14 ga.	8.000	1.97
.0641	14 ga.	12.000	2.95



Spring Phosphor Bronze Sheet

Dimension T		Dim A Inch	Dim B Inch	Pounds Linear Foot	Pounds Per Sheet
Inch	Fraction of B & S Gauge				
.020	24 ga.	8.000	96.000	.617	4.94
.020	24 ga.	12.000	96.000	.926	7.41
.0253	22 ga.	8.000	96.000	.777	6.22
.0253	22 ga.	12.000	96.000	1.17	9.36
.032	20 ga.	8.000	96.000	.983	7.86
.032	20 ga.	12.000	96.000	1.47	11.8
.0403	18 ga.	8.000	96.000	1.24	9.92
.0403	18 ga.	12.000	96.000	1.86	14.9
.0453	17 ga.	8.000	96.000	1.40	11.2
.0453	17 ga.	12.000	96.000	2.09	16.7
.0508	16 ga.	8.000	96.000	1.56	12.5
.0508	16 ga.	12.000	96.000	2.34	18.7
.0641	14 ga.	8.000	96.000	1.97	15.8
.0641	14 ga.	12.000	96.000	2.95	23.6
.072	13 ga.	8.000	96.000	2.21	17.7
.0808	12 ga.	8.000	96.000	2.48	19.8
.0907	11 ga.	8.000	96.000	2.79	22.3
.0907	11 ga.	12.000	96.000	4.40	35.0
.125	1/8	12.000	96.000	5.90	47.2
.1285	8 ga.	8.000	96.000	3.95	31.6
.1875	3/16	8.000	96.000	5.76	46.1
.250	1/4	8.000	96.000	7.68	61.4



Spring Phosphor Bronze Strip

Dimension A Inch	Dimension B Inch	Pounds Per Foot	Pounds 12 Foot Lengths
.0625	.375	.090	1.08
	.500	.120	1.44
	.625	.150	1.80
	.750	.180	2.16
	1.000	.240	2.88
.0938	.375	.135	1.62
	.500	.180	2.16
	.625	.225	2.70
	.750	.270	3.24
	1.000	.360	4.32
.125	.500	.240	2.88
	.875	.420	5.04
	1.000	.480	5.76

STEEL

WEIGHT

Manufacturers' Standard Gauge for Steel Sheets: Although the basic weight of steel used in the manufacture of steel plate, bars, and other steel products is 40.8 pounds per square foot per inch of thickness, the Manufacturers' Standard Gauge for Steel Sheets is based on a weight of 41.82 pounds per square foot per inch of thickness. This modified figure provides an adjustment for the variation in thickness from the edges to the center of sheets resulting from the rolling process and also for the shearing tolerances which are on the over side. The thicknesses in the table below are based upon this weight of 41.82 pounds and represent standard mill practice. These nominal thicknesses, however, are subject to tolerances or permissible variations as given on page 77 of this section for carbon cold-rolled steel.

Standard Gage No.	Ounces Per Square Foot	Pounds Per Square Foot	Equivalent Thickness, Inch
3	160	10.0000	.2391
4	150	9.3750	.2242
5	140	8.7500	.2092
6	130	8.1250	.1943
7	120	7.5000	.1793
8	110	6.8750	.1644
9	100	6.2500	.1495
10	90	5.6250	.1345
11	80	5.0000	.1196
12	70	4.3750	.1046
13	60	3.7500	.0897
14	50	3.1250	.0747
15	45	2.8125	.0673
16	40	2.5000	.0598
17	36	2.2500	.0538
18	32	2.0000	.0478
19	28	1.7500	.0418
20	24	1.5000	.0359
21	22	1.3750	.0329
22	20	1.2500	.0299
23	18	1.1250	.0269
24	16	1.0000	.0239
25	14	.87500	.0209
26	12	.75000	.0179
27	11	.68750	.0164
28	10	.62500	.0149
29	9	.56250	.0135
30	8	.50000	.0120
31	7	.43750	.0105
32	6.5	.40625	.0097
33	6	.37500	.0090
34	5.5	.34375	.0082
35	5	.31250	.0075
36	4.5	.28125	.0067
37	4.25	.26562	.0064
38	4	.25000	.0060

STEEL (cont)**SHEET GAUGES**

Thickness (Inch)	Standard Gauge Number
.2391	3
.2242	4
.2092	5
.1943	6
.1793	7
.1644	8
.1495	9
.1345	10
.1196	11
.1046	12
.0897	13
.0747	14
.0673	15
.0598	16
.0538	17
.0478	18
.0418	19
.0359	20
.0329	21
.0299	22
.0269	23
.0239	24
.0209	25
.0179	26
.0164	27
.0149	28
.0135	29
.0120	30
.0105	31
.0097	32
.0090	33
.0082	34
.0075	35
.0067	36
.0064	37
.0060	38

WIRE GAUGES

Thickness (Inch)	U.S. Steel Gauge Number
.2830	1
.2625	2
.2437	3
.2253	4
.2070	5
.1920	6
.1770	7
.1620	8
.1483	9
.1350	10
.1205	11
.1055	12
.0915	13
.0800	14
.0720	15
.0625	16
.0540	17
.0475	18
.0410	19
.0348	20
.0317	21
.0286	22
.0258	23
.0230	24
.0204	25
.0181	26
.0173	27
.0162	28
.0150	29
.0140	30
.0132	31
.0128	32
.0118	33
.0104	34
.0095	35
.0090	36
.0085	37
.0080	38
.0075	39
.0070	40
.0066	41
.0062	42
.0060	43
.0058	44
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CODES: ND & STATUS
MATERIAL CLASSIFICATION

NOTE: Some materials do not yet have specifications and may change without notice until the spec is finished. Also, some are exclusively used by one department and may be changed without notice by them.

^b Use FOIL for metal, and FILM for nonmetallic parts.

STATUS CODES
FOR PARTS AND PRODUCTS

The status in this catalog was correct at the time it was published.

CM	Custom Mod:	<div>1. An instrument modified to meet customer specifications.</div> <div>2. A component used exclusively in a custom modified instrument.</div>
CR	Current Production:	<div>1. A finished product, which has “turned regular” and is currently being produced.</div> <div>2. A component currently being purchased or produced for use on a current production finished product.</div>
CS ^a	Customer Service:	A replacement item, not used in a current production instrument, supported by Customer Service and either stocked in Customer Service, built or supplied for them on demand.
DL ^a	Deleted:	An item that is no longer produced or purchased and which has no replacement.
EN ^a	Engineering:	An item used exclusively be Engineering which is not being used on a finished product (A part in the design or evaluation stage). The item may be picked up for use in a future product.
IN	International:	An item purchased or produced by Guernsey or Heerenveen for use exclusively in their production.
LR	Last Supply Current:	Last supply of current status material. No more parts will be purchased after these are gone.
LS	Last Supply Customer Service:	Last supply of Customer Service material. No more parts will be purchased after these are gone.
MP	Modified Pre-Prod:	An item set up due to a modification. Establilshed through the use of a Engineering Change Order.
NP ^a	Non-Production:	An item which is no longer produced or purchased and which has a replacement.
OB ^a	Obsolete:	<div>1. A component which has matured through the Long Term Product Support Program. The usage has been out of production for 12 years (sometimes less, if accelerated). The item may continue to be supported through Obsolete Parts Notice 126.</div> <div>2. An instrument which is no longer produced and which has completed the instrument phase-out program.</div>
OT ^a	Obsolescent:	A component used exclusively in an instrument which will go out of production within one year (as determined by the Corporate Phase-Out Committee).
PP	Pre-Production:	<div>1. A finished product prior to “turn regular”.</div> <div>2. A component used on an instrument not yet in current production, or a component going into a current product via an IRS (mod).</div>
SC	Sony/Tek Current Production:	An item purchased or produced by Sony/Tek for use exclusively in Sony/Tek production.
TC	Telequipment Current Production:	An item purchased or produced by Telequipment for use exclusively in Telequipment production.

ND CODES
(New Design Recommendation Codes)

The following is a list of the ND Codes used in this Catalog and their definition per Component Engineering.

A	Approved:	The parts listed as APPROVED are currently available in the industry and the long term support by the vendors looks good. Component Engineering has looked at the part and found no major problems.
N	Not Recommended for New Design:	The parts listed as NOT RECOMMENDED FOR NEW DESIGN are parts which have some sort of problem. They may be built in an old technology or there may be a new better and more cost effective part available. The Component Engineer should be contacted about such parts if a real need arises. In some cases these parts may be the best or only choice for certain applications.
P	Preferred	The parts listed as PREFERRED are recommended over the Approved parts.
U	Undefined	The parts listed as UNDEFINED are not defined yet.
X	Do Not Use:	The parts listed as DO NOT USE are parts which have been found to have major problems. Some examples of these problems are availability, quality, technology, or may be parts which are in the last time buy status. Parts which are being discontinued will also fall into this category. Component Engineering have looked at these parts and found the problems or have been notified of the problems from outside sources.

CODES: ND & STATUS
MATERIAL CLASSIFICATION

^a To use a part with this status on a new instrument, contact Item Data Group, 627-2615, 78-608 for the proper procedure and group contacts.

User
Feedback

The Common Design Parts Catalog group is trying to improve the cost effectiveness and usefulness of the catalog to the customer. In order to do this, the catalogs are continually being reviewed and changes made. If you have a recommendation to improve the catalogs and also make them more cost effective, please let us know. Also if you detect any errors, please notify us so that we may correct them at the next printing.

Your Name _____ Address _____ Phone _____

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_____ Mechanical (Nov-88)

_____ Wire, Insulation & Power
Supplies (May-88)

_____ Materials (Apr-89)

_____ Transistors, Diodes & Misc. (May-88)

_____ Electro-Mechanical (Jan-89)

_____ Supplemental Catalog (Oct-84)

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